PSYCHOLOGY

THE SCIENCE OF

INTERPERSONAL BEHAVIOR

by Max L. Hutt, Robert L. Isaacson, and Milton L. Blum

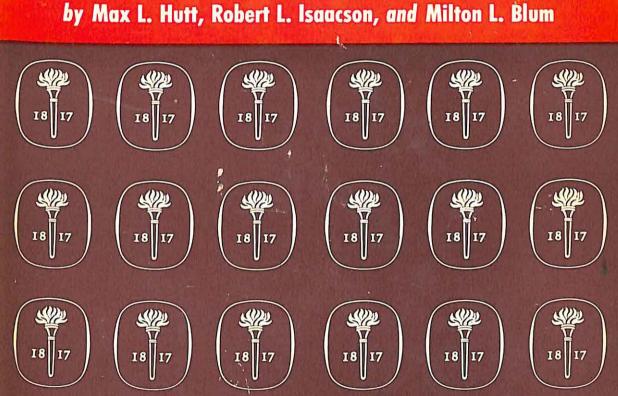A HARPER INTERNATIONAL EDITION

RECOGNIZING the existence of two major orientations within the discipline of psychology, the authors have devised two distinct but complementary textbooks: *Psychology: The Science of Behavior* (a Harper International Edition) with a natural-science approach, and the new *Psychology: The Science of Interpersonal Behavior* with a social-science approach. These texts foster flexibility and treatment in depth; they enable the instructor to organize the course in accordance with his own interests, and they encourage a professor-student orientation rather than a textbook orientation.

Psychology: The Science of Interpersonal Behavior presents the social-science perspective of psychology through a conceptual and integrated examination of the personal and interpersonal aspects of behavior. The text emphasizes theoretical formulations and demonstrates their interrelationships by treating them as overlapping and complementary explanations. The authors do not adhere to, or attempt to inculcate, one point of view. Comparative and evaluative studies are made of the clinical and the experimental approaches, and of the relative contributions and limitations of present findings and viewpoints. Unresolved issues and gaps in knowledge are openly discussed. Recent developments and trends are given primary consideration. The text is extensively documented with schematic figures to illustrate concepts and findings. Many provocative issues are raised for discussion, and there are extensive bibliographies.

From the Contents. Part One. Introduction: The Meaning of Interpersonal Behavior. Part Two. Behavioral Development. Part Three.

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PSYCHOLOGY

The Science of Interpersonal Behavior

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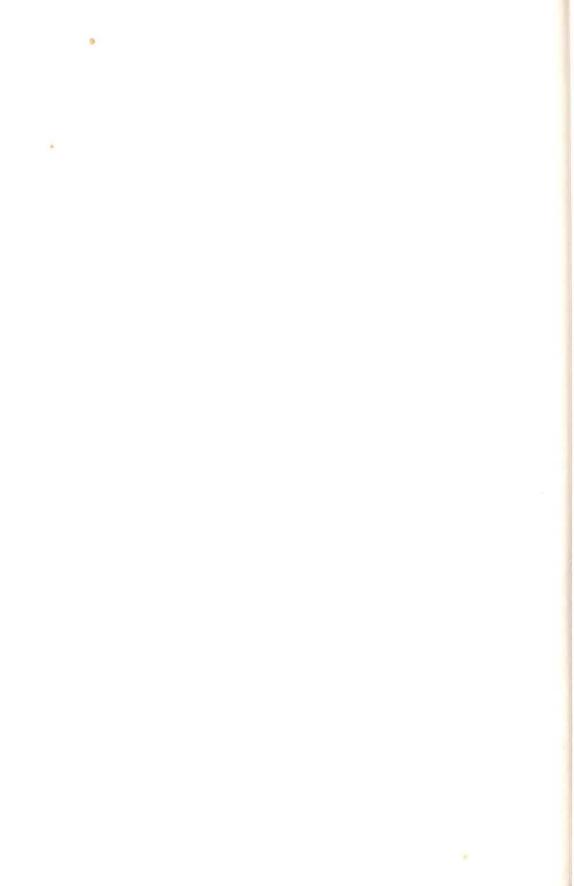
PREFACE

This introductory textbook in psychology represents a departure from the traditional approach found in other introductory texts. Its focus is on the broad area of interpersonal behavior. It attempts to utilize consistently a social-science orientation rather than to view behavior from differing, and sometimes irreconcilable, perspectives. The implicit question we have asked throughout the book is, "How well does a social-science approach to interpersonal behavior enable us to comprehend and predict behavioral responses?"

This approach has enabled us to examine theory in considerable depth. Our hope was that a careful study of theory would lead to a meaningful and critical understanding of basic issues. Moreover, we have tried to select and present parsimoniously

the data—experimental, clinical, social, and cultural—which are relevant for such a study, and to give the student a forthright and relatively complete presentation of such findings. The relative values and limitations of alternative theories in explaining important aspects of interpersonal behavior should therefore become more clearly evident. Our analysis of the different theories is presented with the expectation that they will be viewed not merely as conflicting interpretations of behavior, but as supplementary and perhaps complementary. We have invited the reader behind the scenes, so to speak, to participate in the kind of thinking psychologists do, without foreclosing issues prematurely. Too often, we believe, students are given inappropriate feelings of false closure in regard to basic issues.

The sequence of chapters is designed to provide cumulative growth of understanding. The early chapters deal with basic concepts, primary methodological issues, and competing philosophical perspectives concerning the psychology of interpersonal behavior. The later chapters build on theories and data presented earlier. This arrangement makes possible the presentation of fairly complicated problems which are often omitted from an introductory textbook or are given superficial treatment. The arrangement of topics makes it necessary for students to master the concepts and theories presented in the earlier chapters before studying those in the later chapters.

The first chapter deals with the nature of theory in psychology and with some basic tools needed for analyzing the data of behavior. Following this, basic principles and facts concerning the development of behavior are presented. In subsequent chapters we discuss theories and evidence about personality development, the nature of conflict, and methods of resolving conflict. This enables us to consider the problem of defining the structure of the personality and to examine theories offered to account for the organization of the personality. The phenomena of personality disorganization and some theories to account for them are examined next. Then we consider methods that have been proposed to promote the reorganization of the personality. In the light of prior material, it is possible, finally, to evaluate methods of assessing different kinds of interpersonal variables and to introduce the student to some basic considerations about social phenomena and group behavior.

Of course, some topics which some instructors may believe to

be important have been omitted. The long lists of references given at the end of each chapter suggest that a specialized treatment is required in an introductory text—as our book is designed to be. These references, and others which may be suggested, will enable the individual professor to emphasize those topics which he believes are most significant. It seems to us that such individual emphases in instruction make the teaching and learning of psychology most rewarding and stimulating.

A companion volume to this book, *Psychology: The Science of Behavior,* prepared by the present authors and published in 1965, selects those topics which permit a natural-science orientation to psychology, and treats them in depth. The use of that book may provide coverage of other basic issues required in introductory courses which are designed to provide broader coverage than the present volume can provide alone.

The preparation of this book has involved the close interaction of the three authors. Each has a different type of background. All have had extensive experience in college teaching and in research. One is a clinical psychologist with varied experience in the diagnosis and treatment of individuals with either mild or severe personality problems. Another has specialized in the area of physiological psychology. The third author has been involved in the field of industrial psychology. Yet all of us have agreed on the significance of the basic issues presented in the present volume. We hope that the final product represented in the text has benefited because of the balanced set of interests and perspectives represented by the authors.

We have been particularly fortunate in having the critical but sympathetic counsel and detailed review of our text by our two professional editors: Wayne H. Holtzman and Gardner Murphy. We have labored hard in attempting to make full use of their advice and suggestions. We are also extremely grateful to the many colleagues who read individual chapters of the book and offered many helpful criticisms. We have not always agreed with the advice we were given, but we have considered it most carefully. We owe a very special debt of gratitude to George A. Middendorf, psychology editor of the college department of Harper & Row, not only for his patient encouragement during the preparation of the manuscript, but for his invariable helpfulness in meeting complex problems during this period. We must, of course, assume final responsibility for whatever merit

and limitation our book has. Once again, we wish to offer our humble thanks to our long-suffering wives, Anne, Susan, and Naomi. Without their forebearance, tact, and encouragement this work would never have reached fruition.

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January, 1966

PSYCHOLOGY

The Science of Interpersonal Behavior

have felt and acted toward him in the past. This book is about man's personal and *interpersonal behavior,* or about how man relates to himself and to others.

Man lives in a constant state of flux, but some aspects of his behavior remain constant. Since present behavior evolves out of previous physical and psychological contexts, we need to learn what factors are significant for this development. To be understood, development must be studied over a life-span. We also need to know whether a particular man's behavior has the same impact upon the various people with whom he is in contact. Indeed, the same man may behave quite differently with different people. Moreover, different people may perceive him as being quite different. Is he really the "same man" under all of these circumstances?

Some literary writers have stated that man is a "prisoner of his own skin." The same physical man may be in that skin, but he may behave in significantly varying ways in his relations with other people. He may, at times, be arrogant; at other times, obsequious. He may be kind to his employees or friends but horrid to his wife. He may appear to be passive and submissive to all or most people but then suddenly and apparently inexplicably erupt in a fit of rage. Even when you think you know a man very well, he may surprise you and reveal qualities you did not suspect. In short, the "same" man within the "same" skin is always something of an enigma. He can be understood if his behavior is studied *in relation to the social situation which evoked it.* At the same time, his behavior can have greater meaning to us if we understand the nature of his needs and the mechanisms through which these needs are expressed.

This book presents the findings derived from the scientific study of these aspects of man's behavior. We shall study the ways in which these findings have been accumulated: from controlled observations of behavior; from clinical studies of disturbed people; from experimental research in the laboratory and social settings; and from theoretical attempts to assimilate and integrate these findings into a coherent and meaningful set of propositions which can help us to predict behavior with greater precision. And we shall examine critically the scientific conceptions of man's personality and his social behavior in order to see their advantages over the layman's conceptions. We shall also seek to evaluate the limitations of the present stage of our knowledge.

Simple and Complex Behavior Functions

Every behavioral act is *multidetermined*. Some kinds of re- sponses, like the reflex reaction of the pupil of the eye to a bright light or the response of the leg to a tap on the patellar tendon below the knee, appear as unvarying, highly specific, simple bits of behavior. These simple acts are, however, modifi- able in a number of ways. The internal state of the organism, or the setting in which the behavior is elicited, may increase or diminish the response. Previous learning may affect the re- sponse. The focus of the person's attention may modify it. In other words, the intensity of a simple reflex response is deter- mined by a complex of factors. This modifiability of response is far greater for more complex behavioral acts. But, whether simple or complex, each response is the end product of many intervening factors. If, for example, we consider such behaviors as pursuing a vocational or professional goal or selecting a mate for marriage, we become aware that many factors influence our responses. The choice of a vocational goal depends, in the first instance, on previously developed interest patterns. The poten- tial satisfactions of attainment of the goal constitute another set of important factors. Other possible factors are intellectual and special abilities, the availability of training and employment opportunities, the kinds of experiences involved in the training program, and social and cultural pressures and prohibitions. Similarly, in choosing a husband or wife, our behavior is determined by many interrelated factors which influence the particular pattern we display. The contrast between the factors involved in simple behavior responses and those involved in complex behavior responses is shown schematically in Figure 1.1.

In both simple and complex behavior, not only are our responses multidetermined, but we have varying degrees of awareness of the significant causal factors. We shall have more to say concerning these differences in degrees of awareness; at this time, we simply wish to point out that such differences are present. For example, when we say, as in the familiar song, "I want a girl just like the girl that married dear old Dad," we are acknowledging the fact that our choice of a marital partner is somehow influenced by both *conscious factors,* of which we

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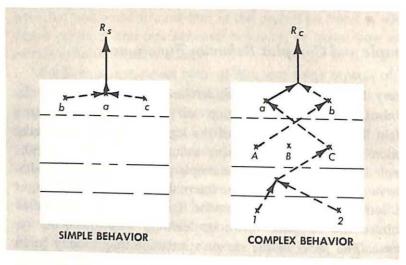
FIGURE 1.1 *Simple and complex behavior responses contrasted. In the simple response* (R_s), *the response is determined mainly by factor* a, *supplemented by factors* b *and* c, *all from the same level. In the complex response* (R_c), *the response is determined by the interaction of factors from many levels of the organism; it is truly multidetermined.*

Responses are varied and multidimensional. Zimbel from Monkmeyer

may be fully aware (such as Mom's charm, intelligence, emotional stability, and the like), and by *unconscious factors* (like the degree of emotional identification with Mom, the degree of emotional dependence upon Mom's approval, and the like). Psychologists attempt to define all of the significant *parameters* (or psychological variables) which are relevant to the behavioral response in order to find more effective methods for predicting the nature of the response.

As we shall see, in subsequent chapters, motivation, emotional state, degree of conflict, degree of perceptual awareness, and defense patterns are all highly influential in determining any particular behavior. Complex behavioral acts, especially those carried out over an extended period of time, appear to be far more significantly influenced by the interactions of these internal factors than are simple responses. Although even simple reflex responses may be influenced, to some degree, by psychological factors, the more complex a response, the more likely it is that it will be influenced by such factors. Simple acts, like turning on the light switch, may involve a number of "inner determinants" (in unusual instances, such as when some irrational fear is connected with the act, these may be crucial), but complex behaviors are much more likely to be significantly influenced by such factors.

Since we cannot "see" the operation of these internal factors, psychologists postulate the theoretical existence of certain *intervening variables* to help explain the behavioral outcome. The process of such theory construction involves a number of steps. On the basis of *observed facts* about behavior, psychologists formulate *hypotheses* (tentative explanations) about it. An interrelated set of hypotheses to predict behavior is called a *theory*. Many hypotheses concern events which are not directly observable, and such hypotheses deal with the postulated *intervening variables* that may help to predict the behavioral outcome.

Let us now turn to a consideration of such variables.

Phenomenological and Dynamic Views of Behavior

Today, few would deny the operation of "inner determinants" of behavior. Psychologists, like other people, take different philosophical approaches to behavior. Thus, they construct

different theories of behavior, each with differing views concerning the nature of the intervening variables. The phenomenological approach in psychology, which represents one extreme on this problem, takes the position that what the psychologist should be concerned with is how the person perceives the events in his own life [1]. From this viewpoint, what really matters in determining behavior is the individual's *phenomenological field*. Data about unconscious factors or about the individual's developmental history are irrelevant in predicting behavior, they say. The only significant factors are how the individual feels about experiences in his life.

In contrast to this position is that of *dynamic psychologists,* in general, and of psychoanalysts, in particular. Psychoanalysts (those who stress the importance of unconscious factors) maintain that to understand behavior one must be fully appreciative of the *unconscious motivations* (those of which a person is unaware) that are largely responsible for it. What a person tells us about his feelings and actions has relevance, but the nature of the relevance cannot be understood without comprehension of unconscious factors. Dynamic psychologists cite examples of many kinds of irrational aspects of behavior to emphasize their position that unconscious factors must be postulated.

As we stated, however, no one disagrees that intervening variables must be postulated. What really differentiates psychologists on this score is how they view them. Some believe that they can define behavior more precisely, and predict it more accurately, by focusing on external conditions rather than on internal variables. Others believe it is necessary to emphasize internal factors. There are at least two basic questions which such differences in orientation pose for the student of psychology. The first is, Which approach leads to better predictions of behavior? This is an empirical question and could be a relatively easy one to answer with appropriate research data. However, the second question indicates that the problem is more complicated than this.

The second question is, What *kinds of questions* should one raise about human behavior? Those who take a dynamic position, like that taken by psychoanalysts, say that one cannot ask the most crucial questions about human behavior unless one recognizes the significance of unconscious forces. They would claim that the phenomenologists raise only trivial questions and neglect the really vital ones. Dynamic psychologists view such

problems as symbolism in dreams, inconsistencies between values and behavior (as, for example, *believing* one has no racial prejudice but *acting* in such a manner as to invalidate this belief), and irrational fears (like being fearful of harmless moths) as critical to any adequate theory of behavior. Phenomenologists might reply that they can predict behavior without answering some kinds of questions and that the problems cited are beyond the province of psychology—or of any science, for that matter.

To make the problem more understandable, let us view the issue by considering some specific examples of behavior. In doing this, we shall be attempting to conceptualize two major aspects of behavior: the *overt* and the *covert*.

Overt and Covert Behavior

Overt behavior may be simply defined as that which is observable and measurable by the observer. In contrast, *covert* behavior is inferred from overt behavior by the observer. Some simple illustrations may help. When a person kicks a dog without provocation, most observers will agree that the observable behavior may be characterized as angry or aggressive. They are describing the overt aspects of the person's behavior. Consider, next, the following behavior. A person is "appropriately but coldly polite." Many observers might believe that, in this instance, the person is actually angry or annoyed. They are making the inference that the overt polite behavior conceals some covert feelings of anger.

Now, let us examine more complex behavior.

In a certain Midwestern town, according to a newspaper account, a man who was well known for his kindness and courtesy in dealing with others was found to have murdered a number of women. He had cut their bodies into small pieces and buried them in his cellar. He had never publicly shown any indications of extreme anger or of emotional instability. When confronted with the evidence of his misdeeds, he made no attempt to deny that he was responsible but maintained that he had simply been slaughtering cows! When shown the dismembered pieces of these women's bodies, he insisted that they were parts of cows, not women.

Psychological study of this man indicated that he was suffering from a severe form of mental disturbance (a psychosis). It

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Overt behavior developing.

Motivation can be inferred although the stimulus is not apparent. United Nations

was learned that there were many indices that he had very strong, hostile feelings toward women. For instance, although he had always been known to be polite to women, he would frequently "forget" appointments with them. Although he had never made deprecatory remarks about men, he had been known to refer to some women in a highly derogatory manner. During the psychological study of this man, it was learned that he frequently had dreams in which he "saw" horrible-looking women chasing him or inflicting pain upon him. He responded on projective tests (see Chapter 8) with considerable indication of latent hostility toward female figures.

This man's overt behavior was that of an essentially stable, polite, and well-mannered individual. On the covert level, there were indications of severe emotional conflict and disturbance and very marked hostility toward female symbols and figures. There was little or no overt evidence of these intense feelings of anger and little or no evidence of the severity of his perceptual distortions. Yet it seemed clear that his overt criminal behavior was determined, in part, by these covert feelings and conflicts.

Another illustration concerns the severe inhibition of cognitive (or intellectual) functions in a college student.

This young man had a very superior high-school record and a very superior record in his first two years of college work. In

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his third college year, however, his schoolwork fell off very sharply. He failed four of the five courses he was taking, and three of these were continuations of courses in his own field of concentration (English literature). He stated that he was employing his usual, or even a larger than usual, amount of study time. He found that he could not concentrate, that he had difficulty retaining what he had read or studied, and that, for the first time, he was panicking on examinations and could not function effectively on them even when he was thoroughly familiar with the subject matter. Later he developed physical complaints, such as stomach pain, headaches, and low back pains. Medical examination revealed no physical basis for these complaints.

The young man sought psychotherapeutic help for his problems. (See Chapter 7 for a discussion of psychotherapy.) In the course of this work it became clear that he had had mixed feelings about going to college. He had told others, and he had tried to tell himself, that he wanted to go to college. He did not wish to disappoint his parents, who wanted him to have a college education. He believed that he loved his parents and that their counsel in such matters was kind and wise. He felt that he could not discuss with them his apparently irrational wish to leave college. Later he became aware that he had considerable resentment toward his parents, but he had never "permitted" himself to confront these "dishonorable" feelings within him. He had always found it difficult, in fact, to express any overtly hostile feelings toward his parents. This was due to his overly dependent emotional attachment to them. They had never let him feel that he could really disagree with them. When this young man resolved his conflicts about himself, he decided that *he* wanted to stay in college. He chose a different field of concentration from the one his parents had selected for him, and he was able to complete his program with good scholastic grades.

In this case we note, again, that there were unexpressed feelings of anger. There was also an excessive degree of emotional dependence upon well-meaning but authoritarian parents. There were conflicting attitudes about the desirability of a college education, with rationalization and other defense mechanisms (see Chapter 4) "piled one upon the other." He was conflicted about what he thought and what he felt. His severe internal conflicts had led him to "try to escape" from the college situation by producing a severe disturbance in the effectiveness with which he used his mental and other abilities. At the overt level he functioned as though he were limited in scholastic ability, although he really had quite superior competency. Finally, he had developed secondary, overt symptoms of his disturbance—his physical complaints—which gave him some

apparent justification for doing poorly in college. In considering this case, we may note how complicated the total end product of behavior is and how many internal, covert behaviors were significant in determining its outcome.

To further illustrate, let us examine the results of some studies of perception. Bruner and Goodman asked children of
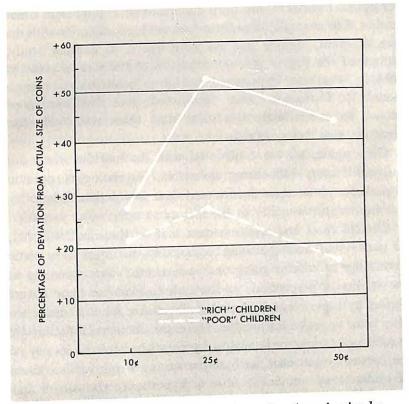
FIGURE 1.2 *Degree of error in size-estimation of coins by "rich" and "poor" 10-year-olds. Adapted from J. S. Bruner & C. C. Goodman. J. abnorm. soc. Psychol., 1947, 13, 33–44.*

approximately ten years of age to adjust the size of a circular aperture to the size of common coins [2]. Under laboratory conditions in which this study was done, children tended to overestimate the actual size of the coins. Even more important, poorer children tended to overestimate the size of these coins far more than did richer children. The difference in degree of overestimation was greater for the larger (and more expensive) coins such as a quarter and half-dollar. (See Figure 1.2.) This study was interpreted to indicate that internal needs influence

visual perception since children from low economic background were presumed to have a greater need for money than those from high economic backgrounds. Although the study has been criticized on methodological grounds (because poorer children have had less actual experience with large coins than richer children, this factor may have influenced the results), the conclusion that "need" can affect behavior—in this instance perceptual behavior—has been confirmed in a number of other studies. For example, in order to control for familiarity with the size of coins, Ashley and his co-workers, in another study, compared the degree of overestimation of the size of coins in subjects who were hypnotized and given posthypnotic suggestions [3]. Those who were "instructed" that they were poor tended to overestimate size more than those who were "instructed" that they were rich.

Once again, we are confronted with the fact that there are internal factors influencing behaviors. Psychologists develop hypotheses about these factors and their interaction. When this has been done, we refer to the factors as *intervening variables*.

Clinical cases and research data such as these indicate that, to understand overt behavior completely, we must have some knowledge of what is going on "underneath." Sometimes, as in the studies of perception, we are able to evaluate these covert factors by experimentally manipulating them. At other times we may have to make reasonable inferences about such factors by careful evaluations of behavior, by an analysis of the history of the person's experience, or by other means. From various kinds of evidence we are finally able to hypothesize the nature and characteristics of such covert phenomena. Much of our study of interpersonal behavior will reflect the psychologists' attempts to construct theoretical explanations of the interaction of covert and overt parameters of behavior in order to arrive at better understanding and prediction of human behavior.

Man: A Machine or a Creative Organism?

Many scientists, both in the social science field and in the biological science field, have struggled with the age-old problem concerning the nature of man. Social scientists, attempting to emulate the physical scientists in their search for precision of definition and measurement, tried to reject the idea of man as

an irrational being, with unknown impulses, unreasoned purposes, and unconscious levels of motivation. Many conceptualized man as a machine—infinitely more complex, perhaps, than man-made machines, but a machine, nevertheless. If man were constructed of many specific parts and observable mechanisms, one could treat his behavior much like that of some inanimate contrivance. One could then more easily understand him and could *control* him more effectively. And, his behavior could be viewed with objective, detached, and "scientific" precision.

THE MECHANOMORPHIZATION OF MAN This whole mechanomorphization of man must be understood as a revolt against mysticism and conceptions of the world as composed of two separate and distinct kinds of matter: animate and inanimate. Inanimate objects were expected to obey "natural" laws about matter. However, animate things were thought to contain a "life-spirit" (*animus*) whose presence made their behavior either unpredictable or understandable only in terms of special "life-spirit laws." Since the time of the Copernican revolution some 300 years ago, when man was displaced from the center of the universe, scientists searched for an explanation of man as an objective, mechanical contrivance whose behavior was determinate and predictable with absolute accuracy. Psychology and the other "social sciences" borrowed a page from classical physics and began to conceptualize man as an organism "with regular motions according to mechanical principles" [4]. Physics departed from the classical traditions concerning mechanics with its discovery of the quantum theory. But, a great many of the disciples of psychology, lagging behind, did not greet this revolution with enthusiasm. Instead, they clung to the traditional and "classical" scientific orientation and, indeed, attempted to reinforce this position with considerable vigor.
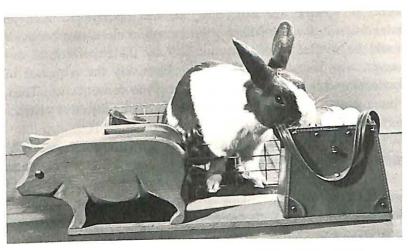
John B. Watson, an "animal psychologist" and the founder of Behaviorism, became the protagonist of this mechanical conception of man and of his machine-like characteristics [5]. He saw psychology as "a purely objective, experimental branch of natural science which needs introspection as little as do the sciences of chemistry and physics." (Introspection refers to the reporting by an individual of his subjective or conscious feelings and thoughts.) *Meaning* and *intent* were stripped from consideration in studying man's behavior. Similarly, subjective feelings were mercilessly removed for the good of an "objective science"
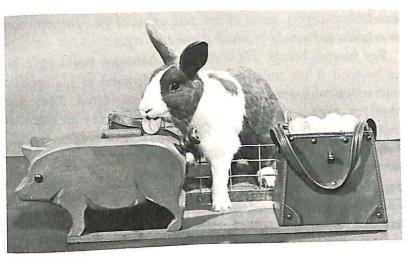
of behavior. Behavior was to be understood solely in terms of stimulus and response! With such a view, said Watson, "The possibility of shaping [of behavior] in any direction is almost endless." Man was now a mere technological device; irrationalities of behavior were simply due to imperfections in the construction of the machine. As Kuo, a disciple of Watson's, put it, "The duty of a behaviorist is to describe behavior in exactly the same way as the physicist describes the movement of a machine. . . . This human machine behaves in a certain way because environmental stimulation has *forced* [*sic*] him to do so" [6].

Watson had a great impact upon American psychology. The major theoretical conception of behavior, in general, and of personality functioning, in particular, was in the direction of the mechanomorphization of man. There were significant exceptions, however, in this country, and much of European psychology did not follow the "new" direction of American thought. At the present time this trend toward mechanization and stimulus-response models of human behavior is being carried forward with highly sophisticated theoretical formulations by B. F. Skinner, among others. (See reference [7] for a detailed consideration of Skinner's position.) In his book, *Science and Human Behavior* [8], and in his treatment of this scientific orientation as a novel, *Walden Two,* he spells out the assumptions and principles he has derived.

Skinner sees man as an *organic machine.* It is not necessary, he believes, to assume that his behavior has any unusual properties. It is based solely on physical construction, and its actual attributes are entirely determinable on the basis of factors in the external environment. Skinner wishes to avoid the error of subjective anthropomorphism. He therefore views psychology's task as that of reducing everything to physical terms. In this process, such concepts as purpose, spontaneity, and meaning would need to be excluded from scientific study. Excluded, too, would be the need to postulate consciousness.

His conception made it possible to visualize a new kind of society—one in which people are controlled for their own good. Since behavior should be entirely predictable, people could be trained to behave in any prescribed way. This training would be under the control of a hierarchy, which would decide what is good for man and would seek to implement this goal by prescribing appropriate conditions of living and learning. The

Can one readily avoid an anthropomorphic interpretation of behavior? Both photos, Godsey from Monkmeyer

ultimate criterion in such behavior-control practices would be the survival of the culture. And it follows that the managers of society, not the individual members of society, should have the responsibility of deciding what the right kind of culture should be.

OPERATIONAL ANALYSIS This mechanistic orientation toward man was given great additional impetus by the formulations of a mathematical physicist, P. W. Bridgman, in 1927 [9]. Bridgman introduced and defined a process of scientific study known as *operational analysis*. By this was meant that any hypothesis or proposition should be formulated and tested in

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terms of specific and objectively defined operations. Such an orientation in the behavioral sciences would mean that behavior could be studied "from the outside" by the experimental observer, who merely had to define objectively the sequence of external events that would produce a given consequence. Thus, "inner man," with its vague, ill-defined, and subjective characteristics, could be eliminated.

It is interesting to note that Bridgman himself not only disavowed this position as a result of his own further studies and the impact of the then new quantum principle in physics but wrote, repeatedly, very careful expositions of the limitations and fallacies of his own earlier position [10]. He had become convinced that operationalism was inadequate because no scientific phenomenon—and no act of human behavior—was understandable except in terms of the uniqueness of that phenomenon *in relation to the field of which it was then a part.*

For human beings this meant that behavior could only be understood if the uniqueness of the individual in his specific interaction with another individual was considered. Thus, the observer, even a "neutral" scientific observer, was an essential part of the field, for, whether he intended it or not, he participated in determining the behavior of the subject. (He was part of the significant "field.") This viewpoint has been vividly expressed by a contemporary philosopher, Karl Mannheim, who said, ". . . a human situation is characterized only when one has . . . taken into account those conceptions which the participants have of it, how they experience their tensions in this situation and how they react to the tensions so conceived"[11]. There is research evidence on this issue, some of which, relating to psychological testing, is reviewed in Chapter 8.

MAN AS A PURPOSIVE ANIMAL   In opposition to the mechanistic conception of man, other social scientists conceive of him as a dynamic, striving, purposeful, and creative organism. Beginning with McDougall, who in 1912 championed the cause of *hormic psychology* (or purposivism in psychology), some psychologists recognized that man's behavior could not be understood adequately without considering his *goals* [12]. As McDougall put it, there are some things that are inert and mechanical, and there are others, especially human beings, that "seem to have an intrinsic power of self-determination, and to pursue actively . . . their own ends and purposes." In more recent

years, some learning theorists like Edward Tolman [13], some psychotherapists like Horney [14] and Fromm [15], and some Gestalt psychologists, like Wertheimer [16] and Lewin [17], have offered views which have this fundamental concept in common: that man is conscious, striving, purposeful, and capable of spontaneous and creative behavior.

Our discussions in later chapters, especially in Chapters 5–7, introduce the student to these dynamic conceptions of man in some detail. At this point, it may be sufficient to indicate that science tries both to understand more completely and to predict more accurately the nature of man's behavior. The student, as well as the scientist, has a responsibility in judging which viewpoint is most congenial and which is most useful. Like the modern physicist, we have to ask which theory explains phenomena most adequately. The theory which does this best will replace other theories. In turn, it will be supplanted by still more adequate theories which explain still more.

The Nature of Behavior Variables

In order to study behavior we have to select some aspects of it for close scrutiny or for experimental manipulation. We could study the development of walking in many ways. For example, we could select the sequence from crawling to erect walking. We could study the development of speech, similarly, by selecting the variable of sentence length in relation to age. We could study the process of thinking by selecting the variable of logical structure shown in a person's speech. In each of these examples the variable selected is itself an abstraction that is deemed important in the study of behavior.

BEHAVIOR VARIABLES—AN ABSTRACTION Any "item" of behavior can be utilized as a behavior variable. Some items will prove to be useful because their study leads to a better theory of behavior and better prediction, whereas other items will be found to be less useful. Some items will need reconceptualization, or better definition, as our knowledge of behavior improves and as our study of the interrelationship of these items of behavior with other items progresses. In any event, a behavior variable is a *response of the organism* that is conceptualized by the observer in a specified, systematic manner. It is therefore

always an abstraction derived from repeated and refined observations of examples of behavior. Certain behavior variables have a concreteness to them, as in the examples we have given. Others, like "honesty," "passivity," "depression," and "dominance" represent higher degrees of abstraction in that these variables represent greater degrees of inference about the behavior than do the more concrete examples given above.

PARAMETERS OF BEHAVIOR VARIABLES The scientific study of interpersonal behavior presents special problems of conceptualization and definition. In the first place, we may conceive of both overt and covert behavior variables, as we indicated in a previous section of this chapter. Suppose, now, we wish to deal with some overt, and presumably more explicit, variable of interpersonal behavior. Such a variable might be defined in a great many ways, and the results of our study would depend upon the definition we utilized. As we shall see, this leads to the problem of the degree of *generalizability* we can make about our hypothesized behavior variable.

As a specific illustration of the kinds of problems which are inherent in the investigation of behavior variables, let us consider *aggression*. This term may be roughly defined as an attack made by one person upon another, in other words, as assaultive behavior. But what is an attack and what is an assault? Each of us can think of different kinds of aggressive behavior. We seldom pause to consider whether these different behaviors have much in common. Is aggression a single factor, or does it consist of many factors? And how can we measure it? Should we define it in physical terms, like hitting or striking, or should we also include verbal assaults, like sarcasm and irony? If we decide to use both physical and nonphysical manifestations, we then have the problem of determining whether these two types of aggression "go together." Are they really expressions of the same underlying factor? If we find that people who are physically assaultive are also as frequently and intensely verbally assaultive, we can then conclude that these are expressions of some underlying aspect of behavior. But thus far we have considered only two *types* of aggressive behavior. Of course, there may be many other types of aggression.

Another dimension of aggression may be conceptualized as *direction*. Aggression may be *outwardly directed* or it may be *inner-directed*. A child may, for example, express his aggression

Aggression is not always directed outward. United Press International

by hitting his mother, or he may express it by refusing to comply with her request that he do something. Inner-directed aggression (which is usually passive) may take other forms than negativistic rebellion. It may take the form of sulking or of becoming depressed.

There are, of course, many other possible dimensions of aggressive behavior, e.g., *frequency, intensity,* and *pattern.* Consider such questions as the following. Does a given individual display a specified type of aggression with similar frequency during different periods of his life? Does the intensity of this behavior vary over time? Does the particular pattern of aggressive behavior remain constant? The psychologist who studies aggressive behavior will need to determine how each of these dimensions is related to the others.

A different kind of dimension concerns the *object* of the aggressive behavior. The term "object" is used here to refer to a person, situation, animal, or physical object toward which the

aggression is directed. Some men, for example, display aggression more readily toward women than toward other men. Some display this behavior toward people whom they perceive as weak or helpless. Some are more likely to display it in group situations.

We can begin to see how complex any study that undertakes to investigate the behavior variable of aggression may turn out to be. Psychologists, therefore, have to keep two things in mind in their study of aggression or any other behavior variable. (1) They have to specify the nature of the variable under study and relate this to some theoretical model in order to give it some "anchorage." Otherwise, both the measure of the variable and the research done with it can be entirely fortuitous. (2) They have to limit the *degree of generalizability* of their findings to those aspects of the variable under study which have been specified in (1). To illustrate this point, consider the finding that children from the lower socioeconomic classes tend to exhibit more physical aggression than verbal aggression. This finding must be restricted to the measures of aggression used in the research, to the definition of "lower socioeconomic classes" specified in the theory, and to the types of samples of subjects employed in the study.

Some psychologists recognize that any definition of a behavior variable is incomplete if it does not consider the field conditions under which it is observed or measured. As we have noted previously, the observer exercises some degree of influence upon the behavior under study, even if he tries to be as inconspicuous and as neutral as possible.

Assessment of Reliability and Validity

In order to utilize behavior variables in theory and research, they must be defined and must be measured in some manner. As we shall see, later in this book, there may be value in "fuzzy" or unprecise definitions in the early stages of theory development because overly precise definitions at this stage may unduly restrict the development of alternative modes of explanation. At the moment, however, we shall be concerned with problems in obtaining relatively precise assessment of behavior variables.

One of the most direct methods of assessing a behavior variable is through direct observation of the behavior in ques-

tion. In this case, the variable has to be defined so that different observers and raters of the behavior can agree on its presence and, possibly, on its intensity. The degree of agreement among judges is known as the *reliability* (interjudge reliability) of ratings. However, although judges might agree perfectly in their ratings—and thus achieve a perfect degree of reliability in their ratings—they would not necessarily be measuring what it was intended that they measure. The latter attribute is known as *validity*. Validity refers to the degree to which a measure truly represents the variable which it is intended to measure. We shall shortly have more to say about the concepts of reliability and validity.

A behavior variable can be measured in many ways, depending in part upon the nature of the variable. Sometimes the intensity of behavior is measured in terms of the effect this behavior has upon some instrument. An example of this is the effect upon an electroencephalograph (a machine used to record electrical activity of the brain) of an increase in an individual's anxiety. There are also various kinds of psychological tests which attempt to measure psychological attributes. As examples, there are questionnaires (called *personality tests*) which measure such variables as anxiety or suspiciousness by summing the person's responses on a "paper-and-pencil" test which contains questions about such phenomena. There are *projective personality tests* which can be used to measure an individual's anxiety or hostility in terms of the degree to which the individual "projects" or interprets relatively ambiguous or neutral test stimuli in terms of these phenomena. In Chapter 8 we discuss measures of this kind, like the Thematic Apperception Test, in which the individual is asked to tell stories about a series of standardized pictures. Another widely used projective test is the Rorschach Psychodiagnostic Ink-Blot Test, in which a person is asked to interpret ambiguous inkblots.

To understand the adequacy of the measures which are employed, we must understand two basic attributes of any measure: validity and reliability. Let us consider the concept of validity first. As we have said, validity represents the degree to which a measure accurately assesses that which it is supposed to measure.

VALIDITY   If we are to know how well something is measured, we must have some criterion or yardstick of this attribute. In

the domain of psychological attributes, establishing the validity of a test is often a complex and long-term task. A measure of the validity of a test or of a rating requires some reference criterion, yet this criterion may be as difficult to obtain or define as the construction of the test itself. If, for instance, we wish to measure "general intelligence," we must first assign some meaning to this concept (or have some theory about it) and then find some criterion which reflects it adequately. If we agree that general intelligence is represented in behavior by how well we learn the academic subjects of reading and arithmetic, then we can establish performance in these subjects as our criterion of intelligence. The validity of our test of intelligence would then be determined by ascertaining the degree to which it accurately predicted performance in these courses. However, we might be unable to agree on a definition of intelligence. Then we would need a considerable period of further observation of various kinds of supposedly intelligent behavior, as well as research studies, to investigate the relationships among these several kinds of intelligent behavior. This would then lead to refinements of the theories of "intelligence."

The selection of a suitable criterion of some behavior variables is even more complex than in our example, the variable of intelligence. In some instances we have less adequate theories about the phenomena in question. In others we have less adequate means of finding suitable external criteria. Suppose we wished to measure a variable known as "ego strength." (The reader will find in Chapters 3, 6, and 7 considerable discussion of the concept of "ego.") We shall learn that ego functions have been defined in terms of the relative adequacy with which an individual is (1) aware of both internal drives and external reality, (2) able adequately to integrate conflicting internal drives in his behavior, and (3) effective in carrying out sequences of behavior in terms of the situation in which he is involved. Measures of the strength of the ego would, presumably, then represent the effectiveness of all these aspects of personality functioning. Even if we assume that we are agreed on our preliminary definition, what kinds of criteria might we select to represent these phenomena? How could we construct measures that would predict them? In attempting to establish suitable criteria, we might find our theory and our definitions insufficiently explicit, and we might find it very difficult to obtain satisfactory criteria of the phenomena in question.

On the basis of these illustrations, we are now in a better position to understand the meaning of the concept of validity in the study of interpersonal behavior.

The concept of validity is usually subdivided into four types. The first of these is called *construct validity*. If we have a fairly clear idea of what it is we wish to assess, either in terms of theory or arbitrary definition, we can develop some methods for ascertaining the degree to which an individual shows this characteristic. In our illustration of the construct "general intelligence," suppose our theory demanded that: "Intelligence represents the ability of an individual to reason logically." We would not necessarily be concerned with the question of how well this ability predicts school performance, or ability to hold a job, or ability to remember, or ability to get along with people. Instead, we would be interested in trying to find measures of "the ability to reason logically." It would remain a task for subsequent research to discover whether this ability was related to other characteristics, such as school performance. Given our "logical reasoning" definition, the task now would be to select items that would presumably measure reasoning ability. We might search through books on logic, or we might try to think up "new" reasoning problems.

In any case, we would select samples of logical reasoning as the first step in developing our test. We would then, perhaps, subject this list to the close scrutiny of a group of experts on logical reasoning to determine whether there was agreement that all of the items represented "logical reasoning," and we would eliminate those items on which we could not obtain substantial agreement. Next, in our refinement of the measure, we might give this preliminary test to individuals who differed widely in reasoning ability. (The reader might wish to consider how this could be done.) After gathering the responses from a large sample of individuals, we could then examine the data to see "whether the items went together," i.e., whether each item discriminated between subgroups of "bright" and "dull" reasoners. This would give us some indication that, whatever the items were measuring, they tended to measure the same kind of thing. Then we might further refine our test by eliminating ambiguities or crudities in the wording of the items. We might wish to place the items in order from easiest to hardest. In these and other ways we could finally produce a fairly good measure of the phenomenon we had chosen to call "reasoning" and

provide greater objectivity and more efficient or less expensive methods of measurement. Figure 1.5 presents a schematic illustration of concurrent validity.
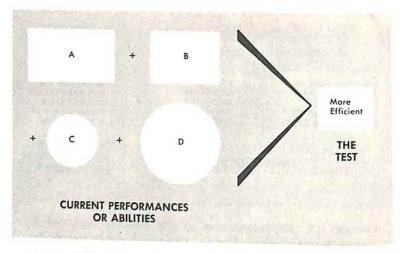
FIGURE 1.5 *Schematic representation of a test based on concurrent validity. The more efficient and more objective test measures the* current *performance in four areas much more simply.*

In some areas a fourth type of validity may be obtained—*content validity.* Suppose you wished to measure the extent to which a student had mastered the content of a course in introductory psychology. In this instance, the content of the course is known (on the basis of the textbook or the instructor's lectures). The task, now, is to construct a test which measures this content in a fair and representative manner. Items of psychology information based on some other psychology course would not be suitable, for example. The test must represent an adequate sampling of the content of this particular course. And the test would be so constructed, therefore, that it provided an appropriate sampling of this content. Content validity is often combined with construct validity in efforts to measure personality variables. For example, would it be possible to develop a test of aggression based on the definition of aggression (the construct) and of known examples of aggressive behavior (the content of actual behavior)? Figure 1.6 illustrates the concept of content validity.

As our last comments have implied, validation may involve one or more of the four types of validity we have been discuss-
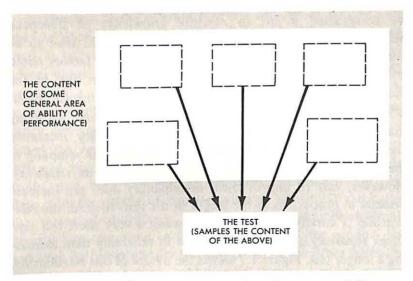
FIGURE 1.6   *Schematic representation of* content validity.
The test samples the content of some area of ability.

ing. The particular method (or methods) of validation chosen
will depend upon the purpose for which the test is developed as
well as upon the nature of the phenomenon to be measured.

RELIABILITY   Assessment also depends upon the *reliability* of
the measure that is being employed. Reliability refers to the
consistency of the results obtained with a test or testing method.
Just as, in speaking of a person's reliability for "honesty," we are
referring to the question of how consistently this behavior is
manifested, so in speaking of the reliability of a measure of
honesty or some other personality variable, we are referring to
the consistency with which our method of evaluation can obtain
similar results.

Inconsistency in measurements can come from a number of
sources. There may be *inconsistency in the phenomenon.* An
individual may vary at different times in the extent to which he
manifests some behavioral characteristic. Not only do people
change over time, but their performance is influenced by such
factors as current motivation, effort required in the perform-
ance, and attention to the task at hand. Hence, even if we had a
perfectly reliable measuring instrument, we would not neces-
sarily obtain entirely consistent results on repeated tests of the
same person due to *factors operating in the individual.*

But the instrument itself may be unreliable. If, for example,

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we constructed a test to measure knowledge of European history, with perfectly valid items, the test would tend to be relatively unreliable if it were too short. Chance factors could unduly influence the results. Thus, length of the test, or the number of items involved in the observation or measurement, affects reliability. In general, as a test is lengthened, assuming that other factors remain constant, its reliability increases. Increasing the length of a measure, or enlarging its sampling of the phenomenon under study, tends to increase its reliability. However, *rate* of improvement in reliability does not increase directly in proportion to the length of the test. Instead, the relationship is curvilinear, so that increasing a very short test produces relatively greater improvement in reliability than increasing a longer test. Figure 1.7 shows the nature of this relationship.
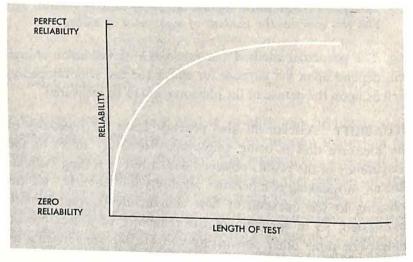
FIGURE 1.7 *The probable relationship between the length of a test and its reliability.*

Another factor that may lower a test's reliability is the operation of *chance or unpredictable effects*. These represent effects that are essentially unknown or unforeseeable. If the person being observed or measured is distracted, this may temporarily lower his score. Similarly, fatigue in the person taking the test may fortuitously influence the measurement. One way of reducing chance effects is to take repeated measures over a short time interval; this tends to average out such factors. Another is to increase the size of the sample of the behavior— as we do when we increase the length of a test—or to take many observations rather than a single one.

A measure of the reliability of the instrument we are using may be obtained in a number of ways. One such method is to give a test to the same subjects twice or to take sample observations on two separate occasions and then compare the results. We can then obtain a mathematical measure of the amount of reliability in the test instrument by determining how much difference there is between the two sets of results. This is called the *retest method*. Another method is to employ two different but equivalent measures of the phenomenon under study, give both of these to the same individuals, and then determine the degree of comparability of results. This is called the *method of equivalence*. The items of a test may be randomly divided into two tests, each half the length of the original test and each half theoretically the equivalent of the other half. The scores on the two halves could then be compared and a measure of reliability (the *split-half reliability*) obtained. A fourth method involves a variation of the retest method. This time the individual is retested, but an equivalent form of the test is used for the second administration. This has sometimes been called the *delayed parallel retest method*.

Measures of validity and reliability can be expressed in mathematical form and thereby treated with greater precision and economy. In order to understand such summary statistics, as well as to be able to interpret the results of reported research and clinical evaluation, we should know the meaning of certain basic statistical measures.

Some Basic Statistical Tools

In studying human behavior, psychologists often acquire large masses of data. These data have to be summarized in some meaningful manner so that their implications can be understood. But, more than summaries are needed. Methods must be found to determine the nature and degree of the relationships found among various behavior variables. The significance of various factors must be weighed. We shall now examine some of these techniques—the statistical tools—so as to understand their values and limitations. Our short introduction to this material can do no more than provide an orientation in such matters. Underlying theoretical assumptions and statistical derivations must be mastered if statistical methods are to be used intelli-

gently. Such mastery requires extensive study and is not possible in this introductory presentation.

DESCRIPTIONS OF GROUPS OF DATA Psychologists gather data from observations and from controlled experiments. Once these data have been accumulated, they must be summarized and analyzed so that their meaning may be clear. One of the first problems in dealing with data is to summarize them in some convenient and appropriate form. Procedures devoted to this task are part of *descriptive statistics*. To describe a group of data statistically, we need to have at least two measures: a measure of the *central tendency* of the data and a measure of the *dispersion* (or the variability) of the data. With these two measures we can describe the data with sufficient accuracy so as to be able to talk about them intelligently and so as to compare groups of data with each other.

Measures of central tendency The measure of central tendency tells us about the "level" of the variable which characterizes the "average value" of the group. It tells us, in other words, what the typical "score" is. If we observe a hundred individuals for the amount of aggression they display, the first thing we may wish to know is how much aggression the group showed "on the average." Suppose that, to simplify our illustration, we have not 100, but 10 scores representing the intensity of aggression shown by each of 10 members of an observed group. The scores might be: 1, 2, 2, 3, 3, 3, 3, 4, 4, 5. A score of 1 represents one act of aggression, a score of 2 represents two acts of aggression, and so on up to 5, which represents five acts of aggression on our scale. Now, our first question is, "What is the average number of aggressive acts displayed by our group?" There are three measures that might be used to answer this question.

The most commonly used measure is one that we are all familiar with: the *arithmetic mean,* or "average," as it is popularly called. To obtain the mean, we simply add up all of the scores and divide the total by the number of cases, as is indicated by the formula for the mean: $M = \Sigma X/N$. In this formula, M represents the arithmetic mean, X represents a score, and N represents the number of cases. For our illustration, $\Sigma X = 30$, $N = 10$, and $M = 3.0$. The mean of 3.0 tells us that, on the average, our group had 3.0 acts of aggression during the observation period. If now we studied another group's aggressive behavior and found that its mean of aggres-

sive acts was 4.0, we could say that the means of the two groups differed by 1.0 aggressive acts. Thus, the mean enables us to describe a group in terms of an average characteristic, and the comparison of two means tells us something about the difference in the two samples of scores.

The mean is the most widely used measure of central tendency, and it is the most appropriate measure of this kind in most instances when large groups of scores are being considered. It has two desirable characteristics: (1) it is a highly stable score, and (2) it is computed by simple algebraic operations (i.e., $[X_1 + X_2 + X_3 + \ldots X_n]/N = M$) and can therefore be used in further computational work (such as in combining data from different groups and computing other algebraic measures based on the mean). It is stable because it is equally influenced by every score in the population. Therefore, comparison of two random samples of scores from a large population will generally yield closer agreement of the means than will other measures of central tendency.

The two other measures of central tendency are the *median* and the *mode*. Generally speaking, these measures have special and limited uses, and we shall, therefore, consider them only briefly. The median is simply the value of the "middle" (hence, median) score when the scores in a population have been arranged from lowest to highest. In our illustration, which involved an even number of scores (10), the median would be the value halfway between the fifth- and sixth-largest scores. In this instance, the median score of 3.0 would be the same as the mean because the distribution of scores is symmetrical. If it were not, the values of the median and the mean might differ considerably since the median is determined only by its *position in the distribution* of scores and it does not give equal weight to each score. To make this clear, suppose we compare two distributions of scores, the one we have already described, which we shall call distribution A, and another distribution of 10 scores, which we shall call distribution B, as in Table 1.1 (p. 32).

The student will note that the mean for distribution B is 3.0, just as it is for distribution A. But the median for distribution B is 2.5 (halfway between the scores of 1 and 4), whereas the median for distribution A is 3.0. In short, the median is always determined by the position of the midmost score. It is not affected by the relative size of the other scores in the distribution. When a distribution is asymmetrical, the median is some-

TABLE 1.1. DISTRIBUTIONS AND MEASURES OF CENTRAL TENDENCIES FOR A SYMMETRICAL AND AN ASYMMETRICAL SET OF SCORES

Distribution A	Distribution B
5	5
4	5
4	5
3	4
3	4
3	1
3	1
2	1
2	1
1	1
$M = 3.0$	
$Md = 3.0$	$M = 3.0$
$Mo = 3.0$	$Md = 2.5$
	$Mo = 1.0$

times preferred to the mean, since extreme scores are likely to be atypical or unduly influenced by chance factors.

The *mode* is simply the most frequently occurring score. When there are two or more such scores, there are two or more modes. In our illustrations, the mode of distribution A is 3.0 (note that in a symmetrical distribution the median, mode, and mean coincide), whereas the mode of distribution B is 1.0.

Measures of dispersion In order to describe a group of data adequately, a measure of dispersion (or variation) of the scores around their central tendency is needed. As with measures describing the central tendency, there are also a number of measures of dispersion. Again, for reasons similar to those we discussed in connection with the arithmetic mean, we shall emphasize the algebraic methods of measuring dispersion.

Returning to our illustration in Table 1.1, distribution A contains 10 scores, each of which differs by a certain amount from the central tendency of the distribution. One measure of dispersion that might be used to describe the scatter of this group is the *average deviation*, or *AD* (also called the "mean deviation"). As this name suggests, *AD* is simply the average of the deviations of all the scores from their mean. Thus:

$$AD = \frac{\Sigma x}{N}, \qquad (x = X - M)$$

where (x) is the deviation of a score (X) from the mean, and Σx is the sum of these deviations without regard to the

TABLE 1.2. CALCULATION OF THE AVERAGE DEVIATION FOR TWO
DISTRIBUTIONS OF SCORES

Distribution A		Distribution B	
X	x	X	x
5	+ 2	5	+ 2
4	+ 1	5	+ 2
4	+ 1	5	+ 2
3	0	4	+ 1
3	0	4	+ 1
3	0	1	− 2
3	0	1	− 2
2	− 1	1	− 2
2	− 1	1	− 2
1	− 2	1	− 2
	$\Sigma x = 8$		$\Sigma x = 18$
	$AD = \dfrac{8}{10} = .8$		$AD = \dfrac{18}{10} = 1.8$

direction of deviation (+ or −). Table 1.2 shows the calcula-
tions of AD for both distribution A and distribution B. The
value of the AD tells us that the average amount of dispersion of
these scores around their mean is 0.8 for distribution A, while it
is 1.8 for distribution B. Group B, therefore, as can be seen
from inspection, has a greater amount of variation around the
mean than group A. Another way of saying this is that the
scores in distribution A cluster more closely around their mean
than the scores in distribution B cluster around their mean.

A more refined measure of dispersion, which has important
mathematical advantages over the AD, is the *standard deviation*
(*SD* or σ). The *SD* simply represents the square root of the
sum of the squared deviations around the mean divided by the
number of observations, thus:

$$SD = \sqrt{\frac{\Sigma x^2}{N}}$$

Since the deviations are squared, the sign of the deviation is of
no significance. We shall not illustrate the calculation of *SD*,
since it is usually employed with larger samples of data, but we
can note that it has three major advantages over AD. (1) It is a
more stable measure. (2) It can be dealt with algebraically, just
like the mean, and can therefore be used in further statistical
treatment of data. (3) Related to advantage 2 is the fact that
the *SD* has certain known mathematical qualities, which makes

it especially valuable. All the student need remember at this point is that it is, mathematically, a better measure of dispersion than any other measure for most statistical purposes, especially when large masses of data are to be summarized.

As with measures of central tendency, there is a very simple measure of dispersion that may sometimes be employed, namely, the *range*. The range is a measure of the difference between the highest and the lowest scores. In both distributions A and B the range is 4.0 (or 5.0 − 1.0). Since the range is entirely determined by the two extreme scores, it is highly unreliable and may fluctuate widely, depending on what these extreme scores may happen to be. The range is therefore used only to give some indication of the total size of the dispersion and cannot be employed in further treatment of the data.

RELATIONSHIPS BETWEEN GROUPS OF DATA Whenever we wish to test some hypothesis, we ask whether the results which have been obtained might have arisen on the basis of chance factors or whether they do in fact arise from factors related to our hypothesis. To illustrate this point, let us consider the hypothesis that ministers show fewer aggressive acts of behavior than a group of laymen. Suppose, then, that we have randomly selected 25 ministers from the population of ministers of a state and have also obtained a random sampling of 25 laymen from the same state, equated for sex, age, and religious affiliation.

In order to test our hypothesis, we have trained observers observe each group for a specified period of time, counting the number of aggressive acts shown by each member of each group. We can then obtain the means and *SD*'s in number of aggressive acts for each group. If the means and the *SD*'s do differ between the two groups, we have to ask whether the obtained difference might not have arisen by chance. This involves a number of considerations which define the *significance of the difference*. In the first place, we have to determine how well our groups of 25 ministers and 25 laymen represent the respective populations from which they were drawn. In other words, was the obtained mean for ministers sufficiently close to what would have been obtained from another sample of 25 ministers (or from the total population of ministers) to be considered a sample from the same population mean value, and was the mean for the laymen similarly representative? Other factors than problems in sampling might affect the signifi-

cance of the results, such as: the reliability of the scoring of aggressive acts; the possible effect that observers might have upon the manifestation of aggressive acts; and so on.

Therefore, we must ask what the probability is that the results which have been obtained might differ from other, repeated samples of the same population? In problems such as these, we are attempting to compare a given set of findings against other samples of the finding to determine the stability of the finding or the difference between groups of scores. We have to compare two groups of data (within a given population or across two or more populations) and determine the size and significance of the difference.
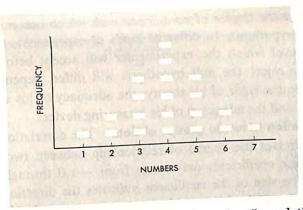
Another kind of comparison between two groups of data gathered on the same individuals asks the question, "What relationship exists between the two groups of data for individuals? We might be interested in learning whether children who come from families with high socioeconomic background differ in displayed aggression from those who come from families with low socioeconomic backgrounds. But instead of merely comparing means and *SD*'s of the two sets of scores, we might determine the degree of relationship between aggression and socioeconomic background. We would then be asking, "What is the size of the correlation between socioeconomic level and frequency of aggressive acts?" (And of course, we would need to determine the statistical significance of the correlation.) As a simple illustration of the use of correlational analysis, we might consider the question of the degree of relationship between height and weight. As is well known, height and weight have a considerable degree of correlation with each other, but, to express the degree of the relationship accurately, we would have to determine the size of the correlation coefficient between these two variables.

These two kinds of questions—the significance of a difference between groups of data, and the degree of correlaton between groups of data—may thus be seen to be closely related. Both involve the problem of inferring the nature of possible relationships from some given data. Both are, therefore, problems in *inferential statistics,* as contrasted with the problems discussed in the previous section—those of descriptive statistics. We shall briefly consider the methods pertinent to problems of this kind.

First, we must consider the general question of how one goes about testing any hypothesis about behavior. Any hypothesis about behavior states that a certain prediction concerning this

behavior will be borne out by experimental study of the phenomenon. We can state our prediction in one of two ways. (1) We can say that a particular difference (or a relationship) exists between two variables (or two groups). This is a positive statement of the hypothesis. (2) We can say that there is no significant difference (or no significant relationship) between the two variables. This is the *null hypothesis*. The null hypothesis simply states (1) that there is no real difference between our groups or the variables being investigated or (2) that any difference which was found might have arisen on the basis of chance alone. In scientific studies, it is simpler to test for the null hypothesis, i.e., to determine whether a difference or relationship can be explained only on the basis of chance factors. If the null hypothesis is disproved, this is evidence that a meaningful difference or relationship may exist, and the theory on which our hypothesis is based in then given some credence.

Differences between groups of data   We have stated that in testing for a difference between groups we must evaluate the probability that the difference has not arisen by chance. What we are really asking, therefore, is whether, if we had repeated samples of the data under study, we could be sure that the obtained difference truly represented other possible samples of the data that we might have obtained from the different populations.

The following experiment demonstrates the effects of taking samples from a population. Take twenty small pieces of paper and write numbers on them according to the distribution of scores given in Figure 1.8. On one piece of paper write the number 1; on another write the number 7. Continuing to work alternately with the scores at either end of the distribution, you will have two pieces of paper with the number 2 on them and two pieces with the number 6 on them. Place numbers on the remaining pieces of paper according to the frequencies shown in the figure. Place the twenty pieces of paper in a box or hat so that you cannot see the numbers, and mix them thoroughly. Now draw out a sample consisting of three pieces of paper and note the average of the numbers on the three papers. Place the papers back in the box and mix them again. Now continue to take additional samples of these papers, and jot down the average in each case. Note the fact that the means of the samples of three papers differ from the mean of the entire population of the twenty slips of paper, often by a considerable margin. Now

FIGURE 1.8 *Example of distribution of a "population." Deviation of sample mean from population mean will decrease as the size of the sample increases. From R. L. Isaacson, M. L. Hutt, and M. L. Blum. Psychology: The Science of Behavior. New York: Harper & Row, 1965, p. 20.*

increase the size of your sample by drawing four slips of paper each time, and note the averages obtained in this part of the experiment. If you then continue to increase the size of the sample you take when reaching into the box, you will find that the means of the selected sample get closer to the true mean of the population as samples drawn get larger.

The null hypothesis merely asserts that any difference between groups of scores comes from this kind of chance fluctuation, that is, the difference is due to the "luck of the draw" in obtaining the sample.

There are a number of methods, too technical to discuss in an introductory treatment, for estimating the significance of a difference between groups of data. Some of these methods are called: the standard error of the difference, the t test, the F ratio (or F), and the chi-square (or χ^2). These are simply statistical methods for estimating the probability that a difference between groups of data might not have arisen by chance. Thus, an experimenter might report that the probability of obtaining a difference of this size between two groups of data (referred to as p), was at or beyond the .01 level. This would mean that the obtained difference would not have arisen on the basis of chance fluctuations in sampling more than 1 time in 100 samples (or attempts). Hence the null hypothesis could be rejected, since the difference was sufficiently large that the probability that the difference was due to chance was small. The probability of differences is called the *confidence level* and

represents the degree of confidence with which one may reject the null hypothesis. In different kinds of experiments the confidence level which the experimenter will accept before he is willing to reject the null hypothesis will differ, depending, in part, upon the rigor of his theory, the adequacy of his sampling methods, and the adequacy of his measuring devices.

Correlation between groups of data   The correlation coefficient expresses the degree of relationship between two sets of data. These coefficients may range from -1.0 through 0.0 to $+1.0$. The sign of the coefficient indicates the direction of the relationship, while the numerical value represents the degree or size of the relationship. A coefficient of 1.0 is indicative of a perfect relationship, while a correlation coefficient of 0.0 indicates that there is no relationship. To give some idea of the nature of correlation coefficients, the size of the relationship between height and weight in adults is approximately $+0.7$. This would mean that these variables are strongly and positively related but that the relationship is by no means perfect. Another example of a positive relationship is that which indicates the test-retest reliability of good intelligence tests. Many of the better tests show a reliability coefficient of about $+0.9$, indicating that the two sets of data are highly correlated. An example of a negative relationship is that between anxiety and intelligence test performance. In some studies, a relationship between level of anxiety and performance on intelligence tests of about -0.2 has been reported. This would mean that there is a slight negative relationship between these two factors, as measured. In other words, high anxiety tends to go with low intelligence test performance, and vice versa.

There are various methods for calculating the degree of correlation between two sets of measures. One of the most commonly employed methods is known as the Pearson *product moment correlation coefficient*. In calculating this coefficient, a mathematical formula is employed to determine the degree of the relationship. We can best understand the meaning of correlations by considering the graphic method of portraying relationships.

When the relations between two groups of measurements are plotted on a *scatter diagram,* we can see by inspection how they are related. In this procedure, numbers representing measures of one characteristic of the subjects are given on the ordinate, or *x* axis, and numbers representing measures of the other

TABLE 1.3. DATA FOR HEIGHT AND WEIGHT OF 10 ADULT SUBJECTS

Subject	Height (in.)	Weight (lbs.)
A	74	220
B	72	190
C	70	168
D	68	174
E	68	170
F	68	174
G	68	170
H	66	176
I	64	124
J	62	154
	$r = .70$	

characteristic are plotted on the abscissa, or y axis. Suppose we had the following data, as represented in Table 1.3, showing the figures in height and weight for each of ten adult subjects. These same figures are presented in a scatter diagram in Figure 1.9.
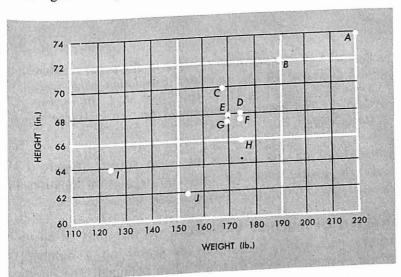
FIGURE 1.9 *Scatter diagram for data in Table 1.3, showing the relationship between height and weight.*

We can see in this figure that measures of height and weight tend to go together, so that when an individual is tall, he is also likely to be relatively heavy. If the Pearson product moment correlation coefficient were calculated for this scatter diagram, the coefficient would turn out to be $+.70$.

The data from studies such as these can also be represented on *scatter plots,* in which each dot represents the scores on the
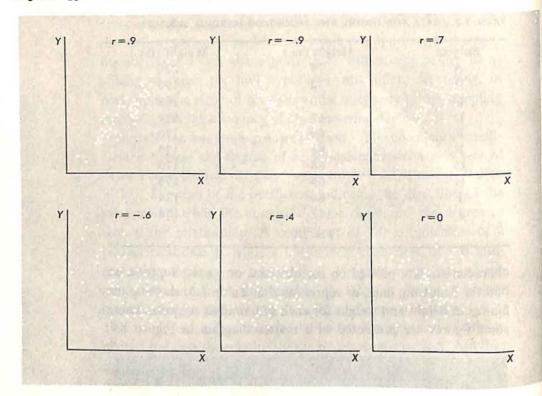
FIGURE 1.10 *Scatter plots of different degrees of relationship expressed by the associated correlation coefficients. From R. L. Isaacson, M. L. Hutt, and M. L. Blum. Psychology: The Science of Behavior. New York: Harper & Row, 1965, p. 25.*

ordinate and on the abscissa for each subject. Figure 1.10 shows six scatter plots for different degrees of relationship varying from − 0.9 through 0.0 to + 0.9.

ANALYSIS OF MULTIPLE VARIABLES   In the study of an individual's personality, evaluations or scores on a number of different personality variables are often obtained. The question then arises as to how one can best summarize such results. Of course, the individual's score on each variable can be reported, or each score can be reported in relative terms, such as whether it falls above or below some critical point. But it often happens that the particular *pattern* of scores may be important in revealing something which the separate scores do not. For instance, suppose we know that, if a person (*a*) has strong homosexual tendencies, (*b*) is highly compulsive in his behavior, (*c*) tends to be withdrawn in his interpersonal relations, and (*d*) engages in a great deal of fantasy, he is very likely to become a *paranoid*

schizophrenic. (See Chapter 6 for a discussion of this condition.) We are thus stating that this particular pattern of personality variables is correlated with this psychiatric condition. To be able to use such information for accurate predictive purposes, or to use such data in the comparison of individuals or groups, we would attempt to summarize these patterns in terms of some mathematical formula.

In the illustration given, let us suppose, further, that we knew the degree of correlation that each of the four factors had with the criterion, paranoid schizophrenia, and with each other. We could then develop a formula by means of which the probability that an individual would fall within the criterion group (schizophrenia) could be objectively stated. Using such a formula, after assigning *weights* to each factor, we could summate the scores on each factor multiplied by its appropriate weight to make our prediction. To give our illustration more concreteness, suppose that we called the four predictor variables *a, b, c,* and *d* and called our criterion *S*. Let us assume that scores on *S* could vary from 20 to 90 points and that any *S* score above 50 represented a strong likelihood that the individual had schizophrenia. We shall also assume that the four scales, *a, b, c,* and *d,* are equivalent in mean and *SD,* so that the numerical values on any one of these scales are equivalent to the values on the other scales. Our predictive formula might then look like this:

$$2.0(a) \times 1.0(b) \times 0.7(c) \times 2.0(d) = S.$$

Each factor has now been assigned a weight in terms of its significance in predicting *S*. If an individual then had the following scores:

$$a = 12 \qquad c = 20$$
$$b = 11 \qquad d = 8$$

his total *S* score would be 65.0, and this score would place him well above the *critical* score of 50. Thus the probability that, as measured on this set of scores, he was schizophrenic would be relatively high. There are methods for estimating the degree of probability of such predictions.

In this illustration, we assumed a linear relationship between each predictor variable and the criterion. Although this is frequently the case, it is not necessarily so. Sometimes a high score on a given predictor variable may have quite a different meaning than usual, depending upon the configuration of the
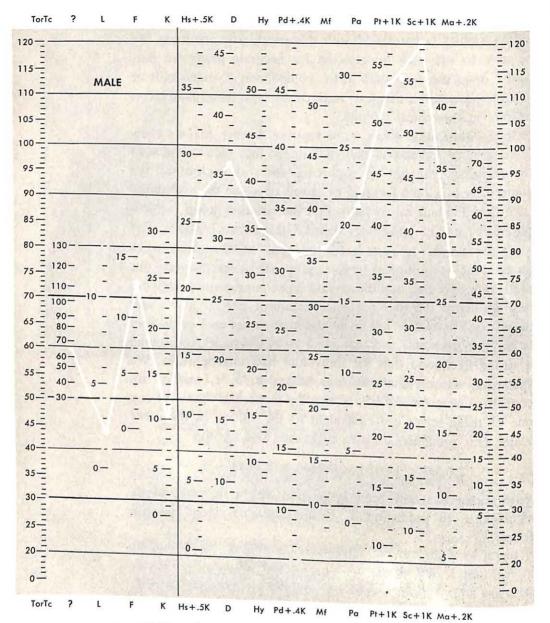
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MALE

FIGURE 1.11 *The profile presentation of the data from the Minnesota Multiphasic Personality Inventory on a male psychiatric patient. From E. S. Schneidman (Ed.). Thematic Test Analysis. New York: Grune & Stratton, 1951, p. 221. Courtesy of Dr. Harry M. Grayson and The Psychological Corporation. Profile form, copyright © 1948 by The Psychological Corporation.*

remaining scores. For example, the variable *fantasy* can operate in quite different ways depending upon other factors in the individual's personality configuration of variables. An individual with high fantasy capacity but who is in good contact with reality and has good interpersonal relations may be quite different from another individual who is also high in fantasy but is poor on the other factors. The first person might be able to use his fantasy constructively and adaptively, while the second might use his fantasy to escape further into withdrawal and reduce his adaptive efforts.

Patterns of scores, all reduced to a common base, are therefore frequently presented as *profiles* (sometimes called configurations). This is especially likely to be the case when there is a large number of scores to be dealt with. One of the best examples of such profile summaries of scores is that of the Minnesota Multiphasic Personality Inventory (MMPI). This is a personality test on which a number of scores for each of several personality attributes may be obtained. (See Chapter 8.) Originally there were nine scales, consisting of such items as hysteria, paranoia, schizophrenia, and the like. The results of the test can be reported on a profile sheet especially prepared for this purpose. Figure 1.11 presents such a profile for a mental patient who was exhaustively studied as part of a research program [18]. The clinician who interprets this profile, must be acquainted with the significance of this type of profile, and this in turn means that he must know the research findings that have been obtained with each variable (or subscale) and with various kinds of profiles.

Profiles, like other assessment methods, can be evaluated for reliability and validity and can be subjected to evaluation so as to compare their utility in relationship to other measures.

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TWO   BEHAVIORAL DEVEL-
OPMENT
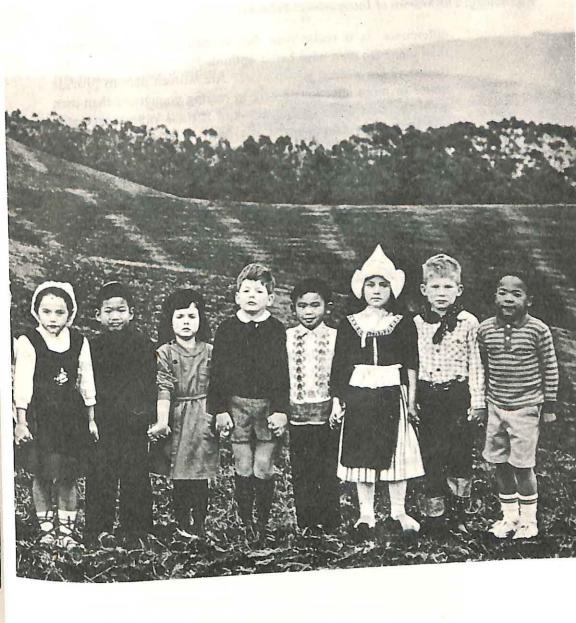
Our study of human behavior begins with an examination of the principles of human development, and this chapter considers both the knowns as well as the unknowns concerning development. Our major purpose is to obtain an overview of the general nature of development before discussing relatively specific aspects of behavior because, as we shall see, adult behavior cannot be fully understood without an understanding of the prior experiences which affect the development of this behavior. So much of what we take for granted as "human behavior" turns out to be attributable to either consistencies or variabilities in the developmental experiences of the individual and not, as is generally but incorrectly believed, to inherent and unmodifiable characteristics of the genus *Homo sapiens*.

How did they get that way? Olin Mathieson Chemical Corporation

In order to concretize the nature of our problem, let us ask some questions about some commonly accepted beliefs relating to nationality and sex differences. We frequently hear that, for example, adult Frenchmen are quite different from adult Americans. Is it really true, as we are so often told, that Frenchmen are better lovers than American men? Are they also more emotional, more sensitive esthetically, and more pleasure-oriented? And if we believe that these questions should be answered positively, can we be sure that these answers characterize all Frenchmen or all Americans?

To evaluate the nature of such real or suspected differences,

we have to ask some additional questions. Are Americans living in the deep South more like "typical Frenchmen" than Americans living in the northern portions of our country? And similarly, are southern Frenchmen similar to northern Frenchmen, or are they more similar to southern Americans? But even more important than the answers to such questions, at least from a developmental viewpoint, is the question, "How did they get that way?" In other words, are such similarities and differences due primarily to inherent genetic factors, or to developmental experiences, or to some combination of both?

Or consider some commonly accepted notions concerning sex

differences. Is it really true that women are more emotional than men? Do men have better aptitude for mathematics and for business? Do women gossip more? Are women able to provide better or more affectionate care in rearing youngsters than men are? Are men more intelligent? And if these differences exist, how shall we explain them?

If we really consider such questions deeply, we can begin to see that knowledge of the principles of development of the human organism is necessary. Such knowledge can contribute to a more adequate understanding of these and related problems. Of course, this poses the immediate problem of how one can determine whether obtained differences—such as those which purportedly exist in the areas of nationality and sex—are the result of genetic or experiential factors. Would it make any difference, for instance, if it was found that French children are more similar to American children than French adults are to American adults? Would it be useful to learn at what ages national or sex differences appeared and what life-experiences were correlated with such differences? Or, in more general terms, would it be useful to learn something concerning the developmental patterns of specific aspects of behavior and to determine whether various aspects of constitution or experience were related to such developments? And, how would knowledge about the stages at which differences in behavior of individuals appeared and the influence of varying conditions of learning upon these differences assist us in understanding and guiding such development?

The foregoing questions and considerations point to the importance of viewing all behavior from a *developmental* framework. In the first place, if we study developmental phenomena, we are able to ascertain whether there are characteristic patterns in development and whether these patterns are modifiable under specified conditions. Thus we can begin to tease out the principles which govern the development of certain behaviors. We can learn whether these principles are universally applicable or whether they hold true only under certain conditions. We can then study the effects of various conditions, both *internal and external to the individual,* which influence development. And all of these findings set the stage for a more accurate understanding of the behavioral phenomena which psychology, together with other sciences, attempts to explain, predict, or control.

Prenatal Development of Behavior

The beginning of the development of behavior of the individual starts with conception, and not with birth. By the time the individual is born he has already acquired a variety of specific skills and potentialities which will determine his later development. Therefore, it is important to understand how behavior develops during the prenatal period. It is also true that both biological and social heredity may contribute to development during this period, but we shall reserve these aspects of the problem for discussion in the next section.

We have to begin with the process of cell division and differentiation following conception. Conception results from the union of the male sex cell with the female sex cell. Some 280 days later, on the average (or from a minimum of 180 days to a maximum of 334 days later), birth occurs. This total period of gestation is customarily divided into three phases: the *germinal* phase, the *embryonic* phase, and the *fetal* phase.

THE GERMINAL PHASE This period lasts about two weeks from the moment of conception. Ordinarily, or in about 99 percent of conceptions, a single *zygote* results from the union of the two sex cells of the male and the female. In some instances, the two male sex cells, or spermatozoa, may fertilize two female sex cells, and *fraternal* or *dizygotic* twins result. Another possibility, and for reasons that are not understood, is that the single union of a male and a female sex cell may split into two groups of cells during the process of early cell division, and *monozygotic* or *identical* twins result. (See Figure 2.1.) In either case, when twins (or plural pregnancies) occur, the prenatal environment is different from what it is when a single zygote occurs: the same uterus now has to accommodate two organisms instead of one, and the presure on the developing tissues, as well as the location within the uterus, affects subsequent growth and development differentially.

The process of cell division begins when the original fertilized cell (or cells, as the case may be) divides into two cells, each with components identical to the original cell. In turn, each cell redivides, and gradually a mass of cells develops, with a cavity inside. Three kinds of cells develop from the original cell: cells

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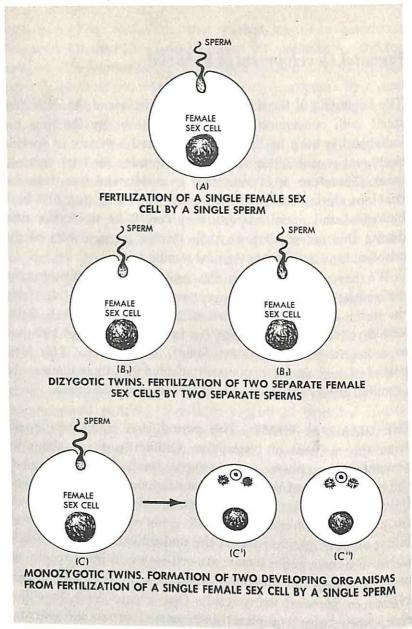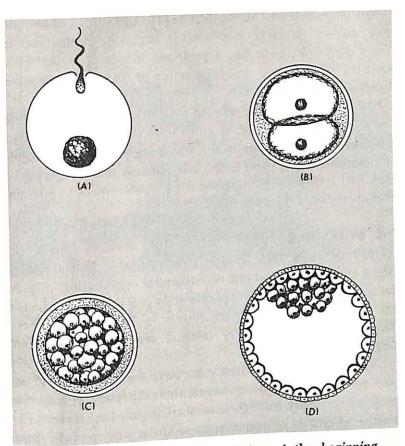
FIGURE 2.1 *Schematic representation of the development of a single individual in* (A), *dizygotic twins in* (B), *and monozygotic twins in* (C).

constituting the outer layer, or *ectoderm;* cells constituting the middle layer, or *mesoderm;* and cells constituting the inner layer, or *endoderm.* Figure 2.2 is a schematic presentation of this differentiation of cells. The question as to how this differentiation occurs is a provocative one. It is probable that different internal conditions of growth, such as amount of nutri-

FIGURE 2.2 *Schematic representation of the beginning differentiation of organs and tissues. At (A) the female sex cell is fertilized. At (B) the process of cell division has begun. At (C) further differentiation has occurred. At (D) the differentiation of an outer layer which will become ectoderm, a middle layer which will become mesoderm, and an inner layer which will become endoderm is shown. Note how the mass grows in size during the process.*

tion (dependent on distance from the umbilicus or place through which nutrition arrives), pressure (related to location), and the like, account for cell differentiation. At any rate, the three major types of cells tend to develop into different tissues and organs. Note that we said *tend to develop.* For conditions within the uterus can affect the course and rate of growth. It has been learned, for example, that there are *critical stages* in the growth of tissue during which both the type of growth and the speed of growth may be profoundly affected. Studies have shown that, with animals, transplantation of cells before specialization of certain functions occurs will result in the acquisition

of new characteristics for these cells [1]. And studies of humans have shown, similarly, that disease occurring during certain stages of development has a profound influence on the fetus, while the same disease occurring before or after these stages has relatively little or no effect.

Not only does growth proceed by *differentiation* in structure and function of parts, but, as growth proceeds, the various parts function in *subordination* to the whole organism. This principle of subordination of parts to the whole means that the growth of each part is dependent upon the whole with respect to rate and characteristics of development.

THE EMBRYONIC PHASE During the next six weeks the "germ" develops into a clearly recognizable human being. Gesell terms this period one of "structural organization" [2]. At the end of this period the approximately one-inch-long organism has crude limbs, rudimentary fingers, a head, definite facial structures, and rudimentary internal organs, such as heart, lungs, and kidneys.

The most important evidence we have thus far about embryonic behavior in humans comes from histories of embryos removed surgically from their mothers for medical reasons [3]. Another source of information comes from studies of the intra-uterine behavior of embryos as recorded on various instruments attached to the mother's abdominal wall, such as the cardiograph, the electroencephalograph (see Figure 2.3), and instruments for automatic recording of embryonic movements. Such studies, from which preliminary conclusions, only, can be offered thus far, indicate that embryos do have movement and that specific reflexes occur, the earliest of which is that of the heart reflex, which occurs at about the sixth week of embryonic age.

THE FETAL PHASE This period, which lasts from about eight weeks until birth, is marked by the very rapid differentiation of both structure and function. By 28 weeks of age the organism is *viable,* i.e., its physiological functions are so well developed that it is capable of maintenance in an extra-uterine existence. Thereafter, growth is focused mainly on increase in size and weight.

There is a very rapid development of the nervous system during this period, and particularly of the brain. At birth the

FIGURE 2.3 *Administration of an Electroencephalographic Test. Courtesy of Grass Instrument Company and the University of Iowa, Department of Psychiatry.*

brain comprises approximately 10 percent of the total body weight. The nervous system develops out of the neural plate, and the anterior portion develops most rapidly, becoming greatly enlarged and differentiating into three main portions: the forebrain (or cerebral hemispheres); the midbrain; and the hindbrain. Thus the organism has a highly developed communication system early in its life, and this fact influences the ways in which the other portions of the organism develop.

Various kinds of evidence (morphological, histological, and electrical recording of brain activity) indicate that the forebrain, and the cortex in particular, is immature in structural and functional development at birth. Since this portion of the brain is associated with such processes as reasoning, memory, and imagining, it is not surprising that the organism is not capable of such behavior at birth. The subcortical portions of the brain have a relatively more advanced maturation, and since these portions govern postural adjustment and the transmission of incoming and outgoing impulses, these aspects of behavior become manifest before birth. Fetal behavior is essentially under subcortical control. The fetus can and does respond to tactile stimulation, it is capable of responding to other sensory types of stimulation, it can engage in motor responses of head, legs, and even lips, and it can engage in respiratory activities and use its vocal chords.

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Although the fetus is, thus, capable of relatively specific responses, its activities are generally characterized as *mass behavior*. The reasons for this become clear when we study in detail the development of the nervous system. Present evidence suggests that mass behavior occurs because of the slow development of myelin tissue in the fetus. This myelin, or sheathing around the nerves, develops first in the subcortical areas of the brain and in the spinal cord, and, even at birth, myelinization of brain neurons is incomplete. Thus, specific behaviors cannot emerge, it is believed, until myelin development is advanced. Before this development, the reflexes which occur are essentially subcortical responses.

Evidence concerning prenatal behavior is based on three kinds of studies: animal fetuses; human fetuses removed surgically from the uterus; and human fetuses within the uterus whose behavior was reported on by mothers under careful conditions of experimental study. One of the most elaborate studies of the latter kind was undertaken at the Fels Research Institute in Yellow Springs, Ohio, in which mothers reported fetal activities under a variety of conditions of the mother, such as after eating, after resting, after smoking, and the like [4 and 5]. All of these studies indicate that fetal behavior tends to develop in a highly orderly sequence. After the initial mass responses which the fetus is first capable of, there later develops a variety of specific and relatively discrete responses. Still later, some of the specific responses are integrated into newer patterns of total responses. Thus, prenatal behavior includes both (1) the *individuation* of more specific responses out of mass and stereotyped general patterns of behavior and (2) the *integration* of newer patterns of behavior out of relatively specific responses that have emerged.

Another general conclusion that various studies have contributed to is that, although there is an orderly development of fetal behavior related to the age of the fetus, some intra-uterine and some extra-uterine factors may significantly influence the course of behavioral development of the fetus. It is known that conditions affecting the mother cannot *directly* influence the behavior of the fetus, since the fetus has its own separate circulatory system separated from that of the mother's by a semipermeable membrane (the *placenta*), and substances are absorbed into and expelled from the baby's system by capillary action. (See Figure 2.4.) However, both physical and emotional conditions
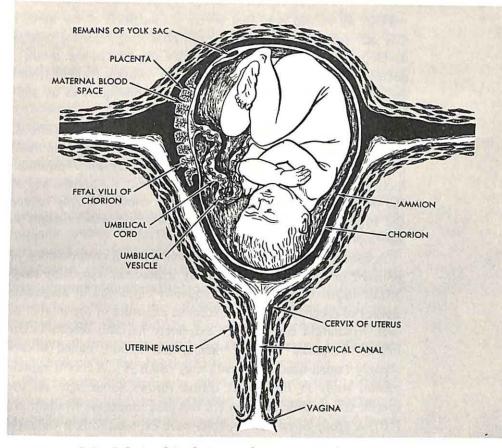
FIGURE 2.4 *Relationships between the uterus, fetal membranes, placenta, and embryo.*

affecting the mother may and do indirectly affect the development of the fetus. In considering these effects, it should be borne in mind that those tissues which are in the process of rapid differentiation at the time are the ones most vulnerable to various influences. This finding, that there are *critical stages* in the development of tissues during which they may be more radically affected, is paralleled by the finding concerning psychological development following birth—that there are also critical stages in behavior and personality development. (See Chapter 3.)

The sample of findings which will now be presented has been based, usually, upon relatively small numbers of cases and should be taken as *strongly suggestive* rather than *conclusive*. However, only those results will be reported which are based on carefully controlled studies or on studies which have been replicated.

First, we should note that severe malnutrition of the mother may adversely affect the fetus, even producing retarded mental development in some cases [6]. A few diseases of the mother, notably smallpox, chicken pox, German measles (rubella), and syphilis may have adverse effects. Such consequences as stillbirth, cataracts, and retardation may follow.

When drugs are taken to excess, the baby may be harmed. Cases of asphyxiation and brain damage have been reported. Cigarette-smoking by the mother during pregnancy produces increased heart activity in the fetus, especially toward the end of the pregnancy period [7]. Various other conditions may reduce the supply of oxygen to the fetus and cause abnormalities in development [8].

A condition that has special relevance in our consideration of prenatal influences is that of X-ray irradiation, especially since X-ray diagnosis has been so frequently employed in diagnostic studies of pregnant women. Excessive exposure of the mother to such irradiation can produce extremely harmful results in the infant. A special form of mental retardation, called microcephaly (small head; pin-head) may result [9]. A recent experimental study in the Soviet Union throws some light on the specific effects of irradiation (in this case ionization irradiation) [10]. A group of rats and rabbits were exposed to X-irradiation antenatally and compared with control groups. They were studied extensively by means of electroencephalographs, behavioral conditioning experiments, and morphological analyses. It was found that X-irradiation significantly reduced the total cerebral mass, caused cellular instability of the cortex, and disturbed certain reflexes. Finally, it was found that these effects varied according to the time in the organism's life when X-irradiation was applied and that different layers of the cortex were thus affected. It was concluded that the usually stable prenatal conditions which guarantee orderly prenatal development *can be influenced by certain radical means* and can have long-lasting effects.

Findings such as these indicate clearly that the usually stable conditions which surround the fetus can be altered and that such alterations can affect subsequent development. The physical condition and the activity of the mother do influence the development of the fetus, speeding it up, slowing it down, or producing abnormal development or even disease.

Emotional conditions of the mother have also been shown to

influence the course of the fetus's development. In general, maternal emotions, especially if severe, tend to increase fetal activity. This result is produced through an increased rate of metabolism in the mother, by means of increased cell activity and hormonal discharge. Postnatal aftereffects may include hyperactivity, malnutrition, increased bodily movements, and disturbances in sleep and gastrointestinal upset. In the most serious cases, stillbirth may result [11]. Even unconscious attitudes of the mother may adversely affect development of the fetus, especially if severe or prolonged [12].

As can be imagined, experimental manipulation of humans to investigate the effects of prenatal conditions is extremely difficult and limited. Suggestions coming from experimental work with animals support the belief that prenatal conditions can significantly influence later behavior. For example, it has been demonstrated that when pregnant rats are stressed with a conditioned fear stimulus, the offspring behave differently from a control group which did not have this experience [13]. It has also been shown that tranquilizing the mother can produce significant effects on the offspring [14].

Our present knowledge in this field indicates that, although we can dismiss the "old wives' tales" that a physical marking of the baby can result from the mother's fright over a wild horse, the mother's emotional state, her physical condition, and her physical activity may influence the subsequent development and behavior of the infant. In fact, we might go so far as to say that appropriate physical and mental hygiene for the mother are prerequisites for effective pre- and postnatal development of the baby. We still have a great deal to learn concerning the specifics of such influences.

Biological and Social Heredity

We have chosen to include these two topics in the same section in order to emphasize the interdependence of the one upon the other. Although it is possible to separate the two sets of factors, especially since one refers to the physical and the other to social factors, we shall see that the line of separation is not as precise as the use of the two terms would imply. As a matter of fact, the term *biosocial* inheritance was coined some years ago to acknowledge the finding that there is an interaction of some kind.

We have seen in the previous section that conditions during pregnancy can alter potential modes and rates of development during and after this period. We shall soon note that different cultures prescribe different methods of dealing with children after birth, thus further modifying tendencies in behavior that were already present. There is now available evidence that specially adapted and enriched environments can offset deleterious physical factors, even when they are surgically produced. Even the genes are modifiable, as our later discussion will demonstrate. Thus, we must be clear at the outset that the human organism is, in fact, a biosocial organism and that both biological and social factors must be considered as they interact in behavioral development.
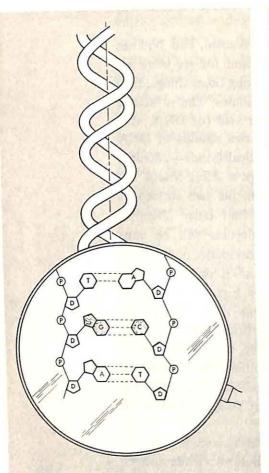
Let us now examine briefly some of the most important findings concerning biological inheritance. This inheritance *starts* with the kinds of genes we are born with. But what are genes? At one time, anatomists thought that these were little lumps that could be detected in histological preparations. The presence of genes was *inferred* from evidence that certain bodily characteristics followed specified patterns in studies of "families" of men and animals. Today we think of genes as hypothetical packets of genetic information determining a specific trait in the species. These "genes" have recently been localized in certain regions of the chromosomes (see below). They are thought of as representing certain coded information which determines the development of trait behavior—that is, they are believed to be mechanisms through which inheritance operates.

Each germ cell in the human contains 46 chromosomes, half of which come from the mother and half of which come from the father. The chromosomes are present in pairs, but the ones that occur in a given cell, resulting from the process known as *reduction division* that is part of the development into spermatazoa and ova, for the male and female respectively, are present on a random basis. In other words, one member of each pair of chromosomes comes from the sperm or egg. Which member is so selected is presumed to be due to chance factors. When the male germ cell and the female germ cell unite during the process of conception, each with its own set of 23 pairs of chromosomes, the union produces a fertilized ovum, and once again there are 23 pairs of chromosomes. Millions of different pairings can thus occur on the basis of chance. And since the determiners of inheritance are carried in the much larger num-

bers of genes, the process of inheriting traits or tendencies is very complex indeed. On this basis it can readily be seen why brothers can be so different from each other.

In 1962 a team of investigators, Crick, Watson, and Wilkins, was awarded the Nobel Prize for Medicine for its work on chromosomes. These men had learned, among other things, how genetic information is encoded in chromosomes. The substance of chromosomes contains deoxyribonucleic acid (or DNA, as it is more conveniently known). There are two strands of DNA which are periodically connected by chemical bonds—adenine, thymine, guanine, and cytosine (see Figure 2.5). When the chromosomes separate during cell division, the two strands of DNA peel away from each other. The four basic chemical compounds determine what kind of molecules will be constructed to replace the DNA strand that is no longer present. An exact replicate of the original DNA strand is produced from each of the single, separated strands. (See Figure 2.6.) It has been learned that the genetic information (i.e., the specific growth patterns) is encoded in the *order* of the four connecting compounds. This order, then, and not the compounds themselves, determines the genetic code. The endless diversity found among people is accounted for by the scrambling of the chromosomes during meiosis, some coming from paternal and some from maternal ancestors.

Some determiners of hereditary transmission contribute to *unitary traits,* i.e., specific biological structures, while others simply determine general predispositions toward the development of constitutional traits or structures. Some genes are dominant whereas others are recessive, so that when the corresponding genes from the respective germ cells are present in the fertilized ovum, the characteristic depends on the balance of these factors. Two dominant genes produce the trait associated with the gene, whereas the combination of a dominant and a recessive gene produces the dominant characteristic, while the recessive characteristic is carried in the germ cell. Thus, there is an interactive effect of the pairs of genes with respect to a given trait. Moreover, since chromosomes may *cross over* from maternal to paternal segments of the respective chromosomes, the resulting chromosome may be partly determined from one ancestral strain and partly from the other. And, finally, there is the process of *spontaneous mutation* of the genes, in which, usually over long periods of time, the characteristics of the
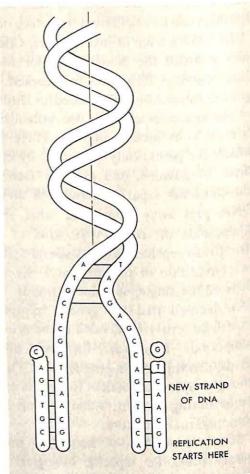
FIGURE 2.5 *Highly schematic reconstruction of double helix formed by DNA molecule. Lower part of helix is enlarged to show bases adenine (A), thymine (T), guanine (G), and cytosine (C), and how these are linked with deoxyribose (D) and phosphoric acid (P). From R. L. Isaacson, M. L. Hutt, & M. L. Blum. Psy-*chology: The Science of Behavior. *New York: Harper & Row, 1965, p. 39.*

FIGURE 2.6 *Replication of DNA during which the two strands of DNA are thought to separate, each serving as template on which new strand forms. Replication is beginning at lower ends of separated strands. Note that end result is two identical double strands. From R. L. Isaacson, M. L. Hutt, & M. L. Blum.* Psychology: The Science of Behavior. *New York: Harper & Row, 1965, p. 39.*

genes change. Sometimes severe stress may produce changes in such characteristics, as in the effects of prolonged exposure to X-ray or in the effects of exposure to nuclear radiation, and the genes may be adversely and rapidly affected. Taking all of these considerations together, we can infer that many factors can influence the course of the presumptive heredity. We still know extremely little concerning the effects, if any, that styles of living in the parents may induce in hereditary characteristics, but we cannot assume that there is no effect over long periods of time.

A child is equipped at birth with a certain kind of constitution, but the way in which he develops does not depend alone on the nature of his constitution or on his genetic background. Even the way in which he is born may strongly influence the kind and the development of his constitution. We have already discussed briefly the nature of the relation of prenatal conditions to the development of the neonate, and we have seen that a person's characteristics do not simply *unfold* but are molded by internal and external factors. The birth process may further affect these characteristics. For example, the baby may be injured during the process of delivery by excessive pressure, by too much oxygen administered to the mother during labor and delivery, by the excessive use of drugs, and by other factors. [See 8, 13, and 15.] Moreover, as we have noted, the mother's attitudes, both conscious and unconscious, may affect the condition of the neonate, depending on such factors as her co-operation and activity during the delivery and her emotional acceptance of the anticipated neonate.

Only in recent years have studies been initiated on the long-term effect of various conditions occurring during pregnancy and delivery. The long-term effects of brain damage incurred during delivery are part of the concern of Pasamanick and Knoblock's work [16]. A very large collaborative study involving 14 different medical institutions is gathering data on genetic, pregnancy, and delivery factors on 40,000 cases [17]. Even the possible relationship between complications attending the birth process and very severe personality disorganization is being intensively studied [18]. (See Chapter 6 for a discussion of this problem.)

And following birth, the influence of social factors as they condition the behavior of the parents toward the infant may influence the ways in which he develops. In fact, each child

may be said to have a *social heredity*. A child is as impotent to modify the circumstances of the world into which he is born as he was to influence the course of his biological inheritance. Culture may dictate that the baby be treated very indulgently, as the Hopis, a southwestern tribe of Indians, have been reported to do, or he may be treated with severity and with rigor, as the

Child rearing and relationships in another culture.

Jack Ling from UNICEF

Pueblo do [19]. What the baby is fed and the great variety of ways in which this food may be offered are also greatly influenced by the culture [20]. The amount of physical handling, of cuddling, of rocking, and so on, also varies tremendously from culture to culture. Moreover, the attention given to the baby, the way his bodily functions are reacted to, and the extent to which the baby is permitted to move about also differ significantly among different peoples. These and other conditions may significantly condition both physical and psychological develop-

ment—or may even produce an abrupt end to life itself [21]. We are still at the beginning of discovery of the story of the short- and long-term effects of such variations in the early life of the infant, but there is little doubt how striking some of these effects may be—in some cases producing emotional disturbance of the proportion of insanity (*autistic psychosis*) [22].

As we follow the infant into the period of childhood, we find that other factors condition both the kind and extent of his physical and psychological development. It has been shown, for example, that many personality characteristics are *class-linked,* that mental illness tends to be distributed differently in different classes (this may be due to both selective mating and socio- logical factors in mental health), and that physical development is affected by habits of diet and activity, which are surely linked to cultural patterns [23, 24, and 25]. How much, one wonders, may the influence be of the current fads for vitamin-enriched diets!

The point of all of these observations is to stress the interac- tion of so-called "nature" and so-called "nurture." We might say that we can only assess the effects of nature when we are able to vary tremendously the effects of nurture, keeping nature constant. Conversely, we can only assess the effects of nurture by varying greatly the effects of nature, keeping nurture con- stant—and for obvious reasons such a study has not been done. But we can point out how, when children live together with their parents from birth on, the correlation between the intelli- gence of parents and children tends to be of the order of 0.5 to 0.6, whereas, when children are separated from their own parents, at or near the time of birth, the correlation drops markedly [26]. This kind of finding, for one phenomenon only, is presented simply to emphasize the interactive aspects of nature and nurture. One has only to consider how much the infant's development may be influenced by other social factors, including the amount and kinds of sensory stimulation to which he is subjected, the kinds and amounts of contacts he has with people, and the interest or lack of it which is shown the infant, to realize how varied is the pattern of social experiences to which he may be subjected. Although it is not our present purpose to appraise any or all of these variations in social phenomena, it is important to stress the fact that the infant is a captive subject with respect to such events. It is in this sense that we can begin to see that he "inherits" a culture—not

through the genes, to be sure, but through the act of being born into a particular culture—and that this culture forms an inescapable part of early, and therefore highly important, personal experience.

Behavioral Characteristics of the Neonate

The *neonatal period,* of approximately two weeks, is the period during which the newborn baby stabilizes its adjustment to the external world. It is highly important to recognize this fact, since the nature of this experience may exert its influence upon subsequent behavioral development. Stabilization of behavior is necessary because the neonate has to learn to adapt to its new external and stressful environment after its long period within a remarkably stable internal environment, the womb. Moreover the "rough passage" into the external world has produced its own share of stresses.

Following the baby's loss of its circulatory relationship with its mother at birth, it has to change its circulation to that of the adult type, with blood flowing into the lungs instead of into the placenta. It has to start breathing, change its methods of elimination, use new methods of ingesting food, and adapt to new methods of digesting its food. The variations in temperature to which it is now subjected require adaptation by its own regulatory system to maintain a reasonably constant body temperature. Blood pressure and blood oxygen level have to be stabilized to meet the requirements of the newer modes of living. The impact of a wide variety of sensory stimulations requires that some physiological adaptation be made to this new input, and sense organs which were not required to operate before birth are now brought into action. It is not surprising that during this period of stabilization the baby loses weight; this loss is related to the amount of physiological activity which has been provoked. Nor is it surprising that the neonate is unable to make a significant selective attention to such a bombardment of stimulation; he is literally fighting for his life, and without the assistance of modern medical methods his chances for survival would not be so great as they are. (See Figure 2.7.)

We have already noted that the nature of the birth process conditions the newborn's behavior and activity. Although we

FIGURE 2.7   *The neonate. University of Michigan News Service.*

have only tentative answers concerning the effects of various
kinds of birth experiences, one example of a well-controlled
study will indicate the significance of this factor. Hughes made a
comparison of the electrical activity of the brain of babies
whose mothers had been given sodium seconal (a sedative)
during the birth process with other babies whose mothers had
not been given this drug [27]. It was found that for some time
later, even after clinical signs in the babies no longer suggested
it, those whose mothers had been given this drug showed sig-
nificantly more depression, even striking depression, of brain
activity (as measured by electroencephalograph) than the other
group of babies.

All babies show a pronounced tendency to engage in sucking
activities shortly after birth. The sucking reflex is certainly

related to the neonate's "need" for survival. But both controlled observations and recent research have indicated that even survival itself is not guaranteed by the sucking reflex. For example, a number of studies have indicated that when the baby does not have adequate *mothering*, that is, cuddling, rocking, and handling in general, it may fail to gain in weight and may otherwise behave in a retarded manner despite being given adequate
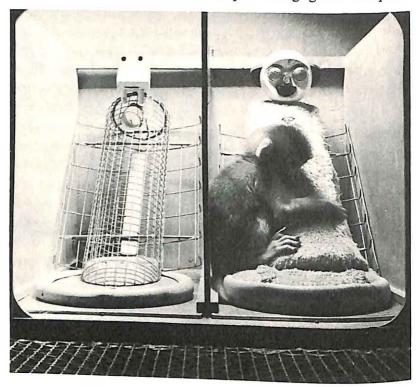
FIGURE 2.8 *Mother surrogates used by Harlow. Infant monkey is clinging to surrogate which has more acceptable "skin" qualities. Courtesy of H. F. Harlow.*

amounts of nourishment. Moreover, recent studies by Harlow with monkeys [28] have shown that even these animals are greatly influenced by the kinds of contacts they have with their mothers. Using artificial mothers made of soft and rounded materials versus mothers made of hard and sharp materials, respectively, and keeping amount of nutrition constant, Harlow showed that monkeys that had available the "softer" mothers were far less fearful, timorous, and agitated but, on the other hand, were more adventurous with respect to their environment than the others. (See Figure 2.8.)

Nevertheless, the weight of present evidence indicates that

the ways in which the neonate (and later, the infant) is fed—not so much the mechanics of feeding but the attitudes connected with the whole feeding process and the general consistency of the patterns of child-parent interaction—influence the further course of behavioral development for shorter or longer periods of time. We shall discuss this problem in the next chapter, on personality development, but we wish to call attention at this time to the importance of these early experiences. Two relevant studies may emphasize this point.

In one study, Marquis compared the behavioral reactions of three groups of infants from the second day of life on to the next few days [29]. The babies were divided into three groups on the basis of the feeding schedules that were maintained. One group was fed every four hours, another every three hours, and the third group on a self-demand basis (i.e., whenever they seemed to indicate by their behavior that they "wanted" food). A comparison of the activity of the four-hour group with the three-hour group showed that the former group increased its activity sharply during the fourth hour, indicating that there may have been a need for earlier feeding, but that prior to this last hour the activity rates of both groups were comparable. When, however, the three-hour group was changed to a four-hour feeding schedule on the ninth day, this group now showed a much higher rate of activity during the fourth hour than did the group that was continuously maintained on a four-hour schedule. These results indicate that *change in the consistency* of the methods of feeding (in this case frequency of feeding) produced a change in behavioral reactions. We can interpret the change as a response to *experienced frustration* resulting from the change.

In another study, the amount of crying by neonates was correlated with the amount and kind of nursing and other care they were given in two ways [30 and 31]. In the first place, the amount of crying during a period of observation in 1944 was compared with the amount of crying done by a supposedly comparable group of babies in the same hospital in 1945. In 1944 the babies were given 0.7 hours of nursing care, on the average, whereas in 1945 they were given 1.7 hours of such care, on the average. The amount of crying was 117 minutes per day in 1944 and was 55 minutes per day in 1945, on the average. Moreover, in the 1945 study, controlled observations showed that there was a relationship between the amount of

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crying and the kind of care given the babies. Other observations supported the conclusion that babies cried less in proportion to the amount of care they were given and the degree to which they were made to feel "more comfortable."

Such studies indicate, then, that certain kinds of neonatal behavior are rather closely connected with (1) the amount of basic satisfaction of primary physiological needs and (2) changes in the patterns of meeting such needs which may ameliorate or affect unfavorably the behavioral responses as needs are experienced as being satisfied or frustrated, respectively.

In general the behavior of the neonate appears to be under the domination of stimulation from the gastrointestinal and genitourinal systems, as studies by Irwin have shown [32]. However, the neonate soon begins to learn to adapt to his environment, although this learning is, at first, unstable and relatively nonpersistent. He responds with a great deal of fairly diffuse activity and responds reflexively to both internal and external stimulation.

The neonate is capable of showing distress reactions and satisfaction responses. The amount of each of these two major kinds of "emotional" responses appears to be related both to constitution—and particularly to level of autonomic activity, in which babies differ at birth—and to external conditions of stimulation. All babies suffer some degree of stress as they learn to adapt to their new extra-uterine environment, but stress can be minimized when conditions of rearing are kept relatively constant and basic physiological needs are met with dispatch.

Postnatal Growth and Differentiation of Behavior

The baby *matures*. This statement implies that postnatal growth is determined, in part, by internal regulatory factors and that growth follows orderly and predictable patterns. In the strictest meaning of the term maturation, the reference is to growth which occurs without opportunity for specific learning experiences. Before birth it is difficult to determine the extent to which such "unfolding" occurs independently of other factors, but studies of animal fetuses removed from the uterus before birth indicate that specific structures and functions do, in fact, appear at regular and well-defined points in the developmental curve.

Even here, however, there is evidence that factors other than maturation influence both the speed at which development occurs and, to a lesser extent, the patterning of prenatal behavior.

In postnatal development of the infant, maturation occurs in a regular and orderly manner provided minimal conditions necessary to support development are present. The development of the walking response illustrates this kind of phenomenon. In Shirley's studies it was shown that progression toward the end of relatively mature walking proceeds through predictable stages, although the ages at which different infants reach each stage differ [33]. (See Figure 2.9.) This kind of finding is supported by studies which show that even when certain kinds of activity are restricted or are practiced, as the case may be, the rate and order of development of many kinds of motor responses are little affected, if at all [34, 35].

Experiential factors seem to affect the rates of maturational development when minimal conditions are not present, however. Recent evidence by Dennis indicates that extreme deprivation of opportunities for stimulation necessary to produce normal maturation can cause serious retardation in maturation [36]. The data for children in an orphanage in Teheran were examined to determine whether Shirley's norms in locomotor development were applicable for such children. For children up to three years of age, sitting was greatly retarded, and in many cases creeping did not occur at all. Some of these children learned to "scoot" instead of to creep. Commenting on his observations, Dennis writes: "These facts seem to indicate clearly that experience affects not only the ages at which motor items appear but also their very form."

Further analysis of such studies has led to more precise statements concerning the nature of maturation. Not all structures and functions are equally impervious to external—or indeed internal but nonmaturational—factors. However, within rather wide limits, basic skills develop, even with varying degrees of stimulation, at a relatively uniform rate. When such skills are practiced before the effects of maturation have become fully evident, whatever greater progress is made is not retained over a longer period of time. In fact, premature training of such maturational skills may, in certain instances, impede growth for a time [37]. It has also become clear that certain psychological skills, such as crying and smiling, appear

FIGURE 2.9 *Postural and locomotor development.* From *M. M. Shirley.* The First Two Years, A Study of Twenty-five Babies, Vol. II: Intellectual Development. (*Institute Child Welfare Monogr. Series, No. 8) Minneapolis: Univ. of Minnesota Press, frontispiece. Copyright 1933 by the University of Minnesota.*

at about the same ages for different children, even when such children lack opportunities to observe other children. But, in the case of psychological skills, the nature of the stimulation provided by the environment, and more specifically the nature of the communication between child and adult, does influence these early personality characteristics significantly under certain relatively extreme conditions [38].

There are important differences in the constitutional equipment with which different children are born and which influence both the amount and kind of activity that they manifest. For example, research by Jost and Sontag has shown that babies differ in the amount of nervous excitability (autonomic stability), which in turn conditions many aspects of motor learning [39]. It is now known that siblings are less alike than identical twins in nervous excitability. The correlation among siblings and the greater correlation among identical twins indicate the influence of heredity. But other factors affect even this rather basic constitutional factor. The size of the correlation in identical twins on the index of autonomic excitability is approximately 0.4. It is clear that nonhereditary factors play their part.

PRINCIPLES OF DEVELOPMENT It is also important to recognize that growth does not proceed at a constant, continuing pace but instead proceeds in spurts, lags, and even by regression (i.e., there may be a loss of some previously acquired function). This characteristic of the growth curve has been called the *spiral effect* [40]. A striking illustration of this phenomenon is the spurt in height that often occurs during preadolescent development. When there is a lag in growth, one may frequently infer that behavior is becoming integrated and that the plateau in the growth curve may be due to such integration. Sometimes a child who has been developing slowly in some characteristic begins to develop more rapidly and may even surpass others who have previously been further ahead in the characteristic. Thus, there are *discontinuities* as well as *continuities* in growth.

Another important developmental principle is that of the *directional sequence* of growth. Growth proceeds more rapidly in the region of the head than it does toward the opposite end of the body; this is the principle of *cephalocaudal* development. At the same time, growth proceeds more rapidly near the center of the body than near the peripheral sections; this is the principle

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of *proximodistal* development. These two phenomena constitute the general directional sequences of growth. Not only do structures of the body follow these conditions of growth, but motor development follows the same general pattern; thus, the peripheral muscles of the body develop later than the others.

One of the principles of development which came to the foreground in recent years is that of *total-organ involvement*. In order to understand how the person develops, it is necessary to note that development of any part is conditioned by the larger whole of which it constitutes a part. Thus, in a fundamental sense the growth of any part is subservient to the development of the organism as a whole. More than this, the development of any organism is dependent to some extent on the organ system of which it forms a part. For example, although a particular part of the brain may be focal in governing motor responses (as in the case of the motor area), nevertheless the brain tends to act as a whole, and the general activity and condition of the total brain play their part in the motor response. Even specific reflexes are modifiable in terms of the conditions affecting the nervous system. Not only function but growth itself is governed by the principle of total-organ involvement.

Still another principle which must be understood in order to comprehend fully the nature of development is that of *continuous activity* of the organism. Studies of the physiology of the brain indicate that there is a constant autonomous process going on within the brain, even when the individual is asleep. Hence, an incoming stimulus impinges upon an organism in an active, not passive, state, and it is the nature of this active state which in part determines what the response will be. In fact, the state of the organism is an important determiner of the kind of response it makes. The human being is not a passive object, upon which forces impinge, but an active one, which attends to, selects, and governs the nature of its own responses to stimulation. This is one of the reasons why people respond differently even though the sources of stimulation are similar or even identical. (Chapters 3, 4, and 5 offer theory and evidence concerning this important principle.)

THE DEVELOPMENT OF ADAPTIVE BEHAVIOR This principle of continuous activity leads us into a discussion of the development of adaptive behavior. As the child develops, he learns to adapt himself to the circumstances which confront him. He

becomes increasingly adaptive as he grows older, under normal circumstances.

Piaget has proposed an explanation of the principles of adaptive development which elucidates the growth of intelligence [4]. The formulations which follow are the result of repeated informal observations by Piaget and his collaborators and a number of research studies. Piaget has not tried to separate, as carefully as some workers would like, theory from validated research findings, but his provocative and creative constructions have given rise to many experiments in the current era.

The infant's earliest behavior is determined in large measure by the specific reflexes of which he is capable, largely by reason of his inherited structure. Thus, he sucks reflexively, not having to learn to utilize this behavior. But the earliest sucking activity does not merely get repeated. As the reflex occurs, it also produces an *assimilation* of the experiences which are thereby generated. Thus, for example, in connection with the original sucking reflex, the infant may put out its tongue and may happen to place its fingers in its mouth. These additional elements in the pattern of behavior not only prolong the use of the sucking reflex but produce an adaptation of the sucking response itself—primitive and not very complicated adaptation by adult standards, but highly significant in its portent for future behavior development. For here, along with the purely reflexive elements which were already present, we see that the infant begins to accommodate its behavior. And in this accommodation, the beginning of *means-ends* behavior emerges. To be sure, one does not have to assume the presence of *intent* on the part of the infant to put these newer activities together with the old one of sucking. The association may first have been accidental, and one does not have to assume knowledge of the end of this process; but the old simple circular behavior involved in sucking has now been replaced by a new pattern. Moreover, since the sight of the fingers may now stimulate the sucking response, just as, previously, contact of the lips with the nipple produced the sucking response, and since sight of the nipple may produce placement of the fingers in the mouth, we can say that the situation has become *reciprocal*. What this means is that older schemata of structural and self-stimulating reflexive behaviors have been replaced by newer and co-ordinated schemata in which the older schemata have been integrated. The newer

Intention in behavior. Children's Bureau, DHEW

organization of behavior therefore brings with it the development of newer needs—needs which were not evident before and which are no longer based on the primitive reflexes. These kinds of co-ordinations—of sight with prehension, of reaching with grasping, and of each of these with other sensory modalities—constitute the primary *circular responses*.

The next stage in the development of intelligence involves *secondary circular responses*. Here, during infancy, the child learns to repeat behaviors which involve objects external to his own body. He learns, in other words, to utilize objects from his environment to satisfy his emerging needs and tends to reproduce such behavior whenever the need is present. At this stage the child is not yet aware of time, but he is beginning to become aware of space. Thus new schemata are introduced into the child's behavioral organization. Later, when the various elements in these newer schemata can be dissociated from one another, when they can be recombined in newer ways, when, in fact, activities are not engaged in simply to take advantage of the

greater complexity of the extended environment in space but are deliberately sought in time to produce the desired ends, *intention* in behavior may be said to have truly emerged. But during the *secondary-circular-response* phase much more highly complex organizations of behavior are possible than during the previous phase.
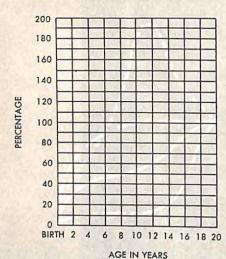
The subsequent development of intelligent behavior through the remaining four phases which Piaget proposes as part of his theory is similar to those we have already discussed. In the final stage the child learns to manipulate his environment actively, by experimentation and evaluation or by mental analysis of previously acquired knowledge, and thus acquires new means of mastering his environment and dealing with his needs. The process is always reciprocal, since newer behaviors with their newer schemata of organization always generate newer needs, and newer needs generate newer behavior. In essence, this constitutes the dynamics of behavior, which we shall be discussing in some detail in the chapter dealing with personality development.

The Development of Physical Behavior

We shall now take one specific aspect of total development—that of physical development—to illustrate some of the phenomena of developing behavior in the human.

The physical development of the various parts and organs of the body does not proceed at the same rate. Various studies of physical growth have shown that the rate of increase is different for different parts of the body. An examination of Figure 2.10 will show that the body as a whole does not increase in size in a regular, consistent pattern over the years from birth to adulthood but rather that the specific parts of the body have significantly different rates and patterns of development. Moreover, there is a rapid spurt in the lymphoid tissues in childhood, and there is an even more abrupt increase in rate of growth in the genital tissues around puberty.

At birth the head is more than one-fourth the length of the entire body, whereas in adulthood the proportion will be about one-tenth. During the first year the cerebellum, a portion of the brain important for postural control, increases by about 300 percent, but the rate of growth of the cortex slows down during

FIGURE 2.10 *Four major types of postnatal growth curves. Adapted from R. E. Scammon. The measurement of the body in childhood. In J. A. Harris et al. The Measurement of Man. Minneapolis: Univ. of Minnesota Press, 1930, p. 193.*

the same period. The nervous system as a whole reaches its adult status at about twelve years of age.

Neuromuscular development shows a number of important developmental characteristics. At first, the grosser muscles gain in strength relatively more than the smaller muscles. The striped muscles show a relatively slow developmental rate at first, and consequently many motor responses and sphincter responses cannot be learned until appropriate development has occurred in this part of the body tissue.

We have noted previously how diffuse are the earliest motor responses; they are not directed specifically to external objects as such. The limp tonus of the baby's muscles makes it impossible for him to engage in many forms of specific motor behavior. For example, he is unable to co-ordinate the movements of his eyes, and he is unable to fixate his vision upon a particular external object for some weeks. Prehension is also rather diffuse for the first few weeks, and, as we have seen, co-ordination of prehensile and visual behavior is at first impossible. The baby is unable to sit up, even with support, until about the third month; he cannot yet hold his head up. The baby goes through fourteen differentiable stages in learning how

From ecstasy to disillusionment via chocolate cake.
Both photos, Wide World

to creep. Learning to walk follows an orderly but slow pattern. Until maturation of the neuromusculature is sufficiently advanced, training has little and only temporary effect; it may even hinder subsequent development if pushed too rapidly and severely. In fact, babies may become quite fearful of walking activities if great stress is associated with learning such behavior, and walking may be greatly delayed.

By two years of age the baby will ordinarily have become quite adept at basic forms of locomotion. He will be able to

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walk by himself, he will be able to climb a few steps, and he will try climbing other objects. However, there will still be some flaccidity of the leg muscles; anyone who has tried to put shoes on a baby will know that he will be unable to keep his leg or his foot stiff. Again, it should be noted that emotional factors may exert their important influence upon the baby's motor behavior. If he is pushed too fast, or if he is frustrated in his relationships with adults in other ways, not only his motor skills may suffer but he may develop fearfulness in situations he did not originally fear, and this may contribute to his general insecurity.

During the second and especially the third year of life, growth in manipulatory skills increases significantly. From simple prehension of objects there is progression to manipulation of objects, in which co-ordination of visual and motor functions is involved. Specific manipulatory skills become differentiated out of the cruder forms of prehension, and finally finger-play, holding and throwing objects, rotating objects such as a doorknob, and even imitating a scribble and later a circle of a crude sort will be possible. Skills in dressing oneself begin during this period, too, and during the third year the child can assist in the dressing activities, particularly in taking some of his things off. It is during the third year that the child will display, characteristically, some negativistic behavior. This negativism appears to be related to his frustration with his inability to do some of the things he sees others do and with his growing sense of being controlled by others when he is making his first steps toward some degree of independence. Patience and tolerance will bring rewards both with respect to the specific negativism as well as with respect to the relevant aspects of physical development.

During the next three years gross physical development slows down perceptibly, but muscle weight and muscle development proceed more rapidly. It now becomes possible for the child to engage in prolonged physical activity with remarkable endurance, sometimes to the adult's great distress. By the age of six years he has developed many fine motor skills and generally good co-ordination. Such skills are now markedly influenced by appropriate training and appropriate motivation.

If one plots the physical growth of height and especially of weight during the first six years of life, one is impressed with the variability in these phenomena over the total period. The usual

growth curves for height and weight obscure this characteristic variability in rate of growth, for they are based on averages obtained on cross-sections of the populations at different age levels. The longitudinal study of single individuals, however, reveals that a smooth curve is not characteristic. In one of the relatively recent studies of this type, a study of individual variability in weight over the first ten years of life, this feature of growth was abundantly documented [42]. Figure 2.11 shows
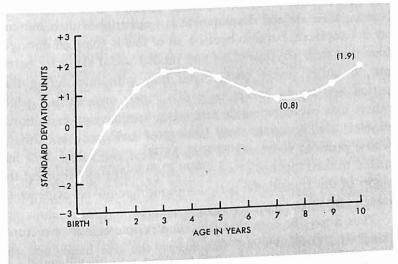

FIGURE 2.11 *Weight of an individual in terms of variability units. Adapted from data in W. Sontag.* The Fels Research Institute for the Study of Human Development. *Yellow Springs, Ohio: Antioch College, 1946.*

the relatively marked variability in weight for a single child. Note that this child's weight changed from considerably below average at birth to far above average at three years, back to slightly above average at seven years, and again up to far above average at ten years.

During the prepubertal period there is a characteristic spurt in growth, especially in height, for both boys and girls. Girls show this spurt earlier than boys, on the average, so that for a period of time girls are bigger than boys of the same age, but later boys overtake the girls and become both taller and heavier. During puberty, when the pituitary glands become more active, hormonal activity influencing the development of sexual characteristics in particular, and general body growth as well, increases rapidly. A new glandular balance has to be achieved,

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and the tissue development of the body shows considerable variability. Skeletal development may increase rapidly while muscular development proceeds at a constant rate. All of these factors produce considerable internal tension (conflicting physiological characteristics) within the body and considerable conflict in total adaptation. The typical awkwardness accompanying the new sexual roles arising out of pubertal changes may be accompanied by and enhanced by other kinds of awkwardnesses. Adolescents may feel and appear awkward, not only because their skeletal development has outstripped their muscular development, but also because all of this is going on during a time that their physical skills and related social skills are being put to rather severe tests. Some may withdraw during this period and try to live more within "their own shells," while others may overcompensate and attempt to develop exceptional physical skill to cover their feelings of awkwardness. Others, whose previous repertoire of both physical and social skills has added to their feelings of security, may be able to withstand the rigors of this transitional period without much overt evidence of internal tensions.

Thus it may be seen that the complex interaction of maturational and developmental factors, on the one hand, and the interaction of physical and social skills, on the other, constantly operate during the total developmental period. In the beginning, the emergence of certain abilities and skills is largely dependent upon the given constitutional situation but is not entirely uninfluenced by "external" factors, whereas, later, skills may be markedly influenced by opportunities for training and practice. Yet the accompanying self-attitudes which develop as a result of the ways the environment chooses to react to the emerging skills may markedly influence the further development of these skills, and, in turn, the ways in which these skills develop may condition the self-attitudes and the total psychological adaptation of the individual. We shall do well to keep in mind that the organism, whether human or animal, is conditioned and limited by the equipment which it has at its disposal; but, unlike machines, organisms can modify within certain limits both their original equipment and the environmental factors which operate upon this equipment. Above all else, we shall see again and again how the previous experiences of the individual affect the ways in which he perceives, reacts to, and adapts to the constantly changing panorama of his life.

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THREE THE DEVELOPMENT OF THE PERSONALITY

In this chapter we begin the discussion of human personality. If we are to understand any phenomenon, we must first of all define the phenomenon in such a manner that all of us who are concerned with it understand precisely what it is that we are studying. Hence we shall be compelled to define and conceptualize "personality" to meet this requirement. As we shall see, the definition of "personality" involves a number of complexities. To deal with these complexities, it will be necessary to study "personality" from different vantage points.

The introduction to this subject, in the present chapter, will be concerned with the *development* of the personality. Then the *dynamics* of personality functioning will be discussed in Chapter 4. Following that, the focus will be on the *organization* or structure of the personality. These three perspectives should

enable us to understand more fully the major aspects of the phenomenon that is termed "personality."

Toward a Definition of Personality

Some theorists approach the study of personality from the viewpoint of ·individual differences. They are concerned with the relatively persisting modes of behavior which differentiate people. Their study includes all forms of human variability. It includes the almost infinite variety of highly specific aspects of behavior—from simple reflex reactions to individual differences in the highly complex patterns of behavior in, let us say, choosing a marital partner.

Another approach to this problem is that which is concerned with the *general* aspects of human behavior and general principles of human adjustment. It attempts to understand the problems of human uniqueness in terms of such factors as personal identity, modes of organization of behavior, and continuities and discontinuities. One of the widely accepted definitions of personality, viewed from this orientation, is that of Allport, who states: "Personality is the dynamic organization within the individual of those psychophysical systems that determine his characteristic behavior and thought" [1]. This definition accents the interaction of physical and psychological characteristics. Moreover, it emphasizes that these inner determinants of behavior lead to generalized modes (systems) of behavioral outcomes.

We can accept this formulation as a starting point in our study of personality. However, we must add, at the outset, that personality may be defined not only in terms of persistent inner systems but also in terms of the constant interactions of these systems with events that are external to the organism. It is an interesting metaphysical problem to attempt to define the boundary of the organism. Is the boundary the skin, which seems to mark the physical separation of the physical man from the rest of the physical universe? Or is it, in psychological terms, somewhere beyond the skin as various external events around the physical man—other people and other stimuli—impinge upon the individual, stimulate him, and affect his development and behavior?

This addition to the conception of personality considers the organism and the environment as the *field* which is the unit of

study. The personality does not, in this view, exist within the skin. It is the emergent system of behavior which is determined by the psychophysical-social field of which the individual is a part. Behavior can change as any of these three major components, or their interactions, changes. Personality is thus not infinitely stable but is in a constant state of flux. Its tendencies are defined by the total field of which it is a part. In Figure 3.1 the total area within the outer circle constitutes ·the "personality," while the physical organism and its current inner organization are defined by the inner circle.
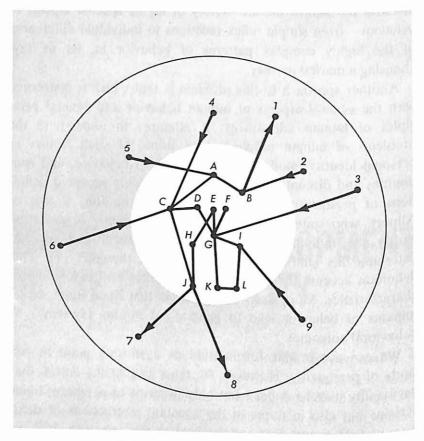

FIGURE 3.1   *Relation between the organized system within the individual (inner circle) and the surrounding field of forces (outer circle) in a field conception of the personality.*

The Early Emergence of Personality

At birth, babies differ in many aspects. In general, we may note that some babies are quite active, others are generally passive, and some are in between [2]. Some authorities speak of these

A small sample of infinite varieties in excitability. Pinney from Monkmeyer

differences as differences in *excitability*. There are other rather broad types of differences among babies, so that we are able to say that babies differ in general temperament at birth. These differences in temperament, or level and pattern of moods in behavior, may be correlated with differences in physical conditions. However, aside from such general differences, babies do not have *personalities*, if by personality we mean more or less persistent and patterned characteristics of methods of adaptation to the environment. It therefore seems reasonable to assume that personality is, to a large extent, learned. Whatever may be the limits of this learning experience, psychologists are agreed that it is learned rather than inherited. The old saying that, "as the twig is bent, so is the tree inclined," still is appropriate regarding our present judgment concerning this problem. But note that even the old saying does not account for all of the tree's characteristics in terms of its early experience in being bent.

If, then, the infant does not inherit a specific and preformed

personality which then merely unfolds, how does his personality develop? We need to examine the evidence concerning the effects of the child's early experience on his personality development during childhood and later years. Although psychologists are agreed on the general importance of early experiences, they are by no means agreed on which factors are most important or on how long-lasting or significant the effects of these experiences may be.

It seems clear that the ways in which primary biological needs are satisfied—the methods by which such needs are gratified and the speed and consistency with which such satisfactions occur—have important effects upon the emerging personality. The behavior of the neonate is under the domination of the gastrointestinal and genitourinary tracts. Let us examine some of the evidence and see what theories have been developed to explain the observed facts.

EFFECTS OF EARLY FEEDING EXPERIENCES Before examining some of the relevant data on this topic, we would do well to consider the perplexities involved in gathering and interpreting such data. If it were possible to assemble a considerable number of infants who were equivalent in personality characteristics and then subject them to varying feeding experiences in order to assess the effects of such variations, we would be faced with an apparently simple problem. However, the problem of defining the variations in "feeding experience" is, in fact, extremely complex. For example, we might vary the foods which were given the infants, we might vary the ways in which the foods were prepared, we might vary the methods by which the foods were "given" to the infants, we might vary the emotional climate in which food was given, and so on ad infinitum. "Feeding" can thus be seen to be a highly complex kind of experience, and how are we to know which aspects are most salient for research and study? In a general way we could categorize the most significant dimensions of the total food-getting experience as a first step in the process of investigation. Then we could experimentally change one part of each dimension while keeping others constant (or use statistical methods to evaluate their effects). In this way we might eventually begin to evaluate the effect of various factors upon later behavior.

But the problem is much more complex than even these considerations suggest. In the first place, we must remember

that although babies may not be born with specific personality characteristics, they do vary in reactivity or general temperament and possibly in other tendencies. These differences may selectively alter the ways in which they respond to feeding or other types of early experience. Hence, we should have to consider how different types of babies respond to the different types of feeding processes. This might lead us to find that certain feeding variables interact differently with different temperamental and neural-excitatory processes. Then, there may be, and probably are, a whole series of co-ordinate conditions which affect the total feeding experience. For example, Ribble has suggested that infants require an optimal amount of "mothering" in order to survive and prosper physically and emotionally [3]. Lest Ribble be accused of sentimentality in ascribing to infants a "need for mothering," let us make clear that what Ribble meant by "mothering" involved various kinds of "physical handling" of the baby, such as picking it up, rocking it, turning it over, and so on. Ribble's contention is that the infant requires physical handling in order to stimulate the circulation of blood and lymph. An infant's physical development is inadequate to take care of this vital process for some time after birth. During the fetal stage of development, the physical movements made by the mother in the normal course of her own activity served to stimulate the baby's physiological behavior. In fact, Ribble found that infants who did not obtain what she termed "minimal mothering," or physical stimulation, frequently developed disorders in breathing and digestion. We shall have more to say about Ribble and related observational and research studies later in this chapter.

Aside from all other considerations, the food-getting experience is highly significant for the infant because of its tremendous biological need for food intake. For example, on the average, weight is doubled during the first five months of life. During this period the body requires considerable food satisfaction if biological needs are not to be frustrated. Depending on the infant's original excitability or reactivity, the amount of distress he is likely to experience will have some relationship with satisfactions derived from appropriate food intake, and later, as he becomes conditioned to them, with the conditions involved in this food-getting experience. Dissatisfaction in obtaining food is likely to precipitate excessive physiological arousal and may generalize diffuse activation of the brain.

Some cultures encourage close mother-child relationships through physical handling.

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Breast feeding Freud believed that the *oral orifice,* that is, the mouth and the regions immediately surrounding the mouth, such as the gums, teeth, the upper and lower palates, and the upper gastrointestinal tract, was of primary importance during infancy in organizing the discharge of oral satisfactions. This region of the body was very sensitive to stimulation. The ways in which these primitive oral-sexual drives were satisfied were seen by him as of critical importance in early personality development. His position, sometimes inaccurately summarized in the psychological literature, was that either *over-* or *under-indulgence* of these drives resulted in frustration of oral-sexual needs and led to personality disturbance which was *likely* (not *necessarily*) to have long-lasting effects. Moreover, he postulated another condition of this hypothesis, namely, that this frustration, to be significant, should occur during the period of *oral primacy,* usually during the first eight months. Thus he postulated a *critical period* for the importance and primacy of the oral-sexual drives.[1]

Some observational evidence seems to support the importance of these propositions. Anthropologists and ethnologists report that in those societies which provide minimal deprivation of oral needs along with positive support for the infant, the adults demonstrate secure emotional adjustments and are able to test reality very well. Studies of the Comanche [4] and of the east-European Jewish culture [5] support this thesis. Of course such evidence is neither universal nor meets the rigorous tests of scientific control of other possibly relevant factors. Nevertheless, direct observational evidence, over many years, of children under laboratory conditions at Yale University leads Gesell to state, "Breast-feeding is the most favorable condition for the initiation of a self-demand schedule" [6]. What Gesell suggested is that the absence or limitation of frustration, which letting the baby set his own pace in feeding involves, is most effectively determined during breast feeding.

The experimental evidence on this problem is not conclusive and is far from easy to interpret. There are a number of reasons for this. In the first place, how is one to conceptualize "under-indulgence of oral drives," for example? Is breast feeding a

[1] Freud conceived of the sexual drives as biologically derived drives related to the *total process* of developing and maintaining affectional relations with people. In infancy these affectional drives were satisfied through oral gratification; hence the term "oral-sexuality" was coined to describe this phase of sexual development.

more effective method of obtaining adequate indulgence than bottle feeding? Is the age of termination of such feeding crucial? Are supplemental methods of feeding significant? Or is the complex pattern of infant-parent interaction during feeding, as well as during other activities, relevant?

Then there is the criterion problem: the kinds of evidence concerning adjustment which one utilizes. Should one consider highly specific aspects of personality response, such as amount of physical activity, thumb-sucking, and the like? Or should one consider more general aspects of personality, such as amount of security, capacity for independent behavior, or absence of pathological adjustment?

There are other problems. How is one to measure the phenomena in question? What kind of sampling of subjects should be studied? For example, are results the same for boys and girls? Does the position in the family among other children make a difference? And still other problems arise to plague the investigator in this field. Must the behavior be observed at first hand, or are retrospective reports by adults about their own childhood experiences adequate? And what about the duration of the effects of the early experience upon later behavior? If one conducts long-term studies, should one look for specific relations between particular early experiences and, later, particular outcomes? These difficulties must be kept in mind in evaluating findings from research studies.

Results are quite ambiguous in studies in which the duration and age of initiating or terminating breast feeding were considered as isolated variables. Thus, Goldman-Eisler [7], trying to investigate the relationship between early weaning and later adult personality characteristics, rated 100 English adults on 19 personality traits. It was found that there was a small but significant tendency for the pattern of "oral pessimism" to be associated with early weaning. On the other hand, Maslow and Szilagyi-Kessler [8], who gave 400 college students an emotional-security inventory, found that the difference between bottle and breast feeding was not of crucial importance. They found, for example, that those who reported having been bottle-fed from birth rated themselves as secure as those breast-fed from birth to over a year of age. The limitations of this latter type of study are fairly apparent, since reports of what may have happened and self-ratings of traits leave much to be desired in the way of adequate research procedures. A more carefully controlled

study at the Fels Research Institute in Yellow Springs, Ohio, in which accurate data on bottle and breast feeding were obtained, may be more to the point [9]. In this study, the complex emotional interactions of an "average" group of children with their mothers were evaluated by means of ratings based on direct observation. No correlation was found between duration of breast feeding and ratings of security in adolescence. The better-educated mothers used more subtle forms of discipline and nursed their children for shorter periods. It was concluded that the duration of breast feeding, per se, did not appear to be of crucial significance. The complex pattern of emotional interaction between child and mother seemed much more relevant.

In contrast to this study is the one by Brody at the Menninger Foundation at Topeka, Kansas [10]. In this research, 32 mothers and their infants were observed both in the clinic and at home. Observations were intensive and repeated. Very great variations in the patterns of breast and bottle feeding were observed. The amount and type of bodily contact, communication, and expressed attitude also varied greatly in the two extreme groups of mothers, as Table 3.1 shows quite clearly. The findings of this study suggested that breast feeding, by itself, did not insure "gentle procedures, intimacy, or restfulness." However, breast feeding by mothers who were not in conflict about this practice or, in other words, who probably employed breast feeding as part of a total, accepting, and warmly secure relationship with the infant, was related to highly favorable responses by the infants. This is a conclusion of the investigator which her data seemed to support but which is not rigorously tested by her own data. The study did clearly demonstrate, however, that the total feeding pattern, rated on the basis of reasonably objective and replicable observational scales, was more indicative of the nature of the relationship between mother and infant than any other pattern or single variable. *Only a study of the total feeding relationship was significant in predicting the emotional relationship between mother and infant.* It was also learned that, when this total relationship was favorable, the mother responded in a consistently sensitive way to the baby's expressed needs. This sensitivity to the baby's needs was not present when the relationship was "unfavorable." In the latter case, the mother was likely to be consistent in her methods of dealing with the infant but so rigid that she frequently frustrated not only the hunger drives of the baby but his

oral needs as well. This research clearly does not tell us much about the effects of "a favorable mother-child relationship" which result from good breast-feeding practices, but, of course, this was not its purpose. Nevertheless, it does highlight many important aspects of the nature of the total feeding experience of the baby.

TABLE 3.1. COMPARISON OF THE INTERACTIONS OF MOTHERS AND INFANTS IN CONNECTION WITH INFANT FEEDING

Category of Behavior	Group A Mothers ("Good" mothers) $N = 7$	Group D Mothers ("Poor" mothers) $N = 11$
Bodily contact	Mother (M) holds child securely; M and infant (I) relaxed; feeding tempo consistently moderate; M waits for I to show cessation of interest in feeding.	M does not use position comfortable for both M and I; M's tension interferes with I's feeding; feeding interrupted abruptly.
Communication	M is able to respond to both I and others; talks gently to I; M and I smile frequently to each other; M shows tenderness, pride.	M frequently urges I to eat; frequently withdraws and restores nipple; occasionally teases or threatens not to offer food.
Expressed attitude	M prefers breast feeding; reasons for breast feeding: brought up that way, most natural, most satisfying; M uses flexible schedule because I's moods vary; usually considers latter part of 1st year best for weaning from breast; none in hurry to wean.	Most M's breast-feed for few days only and offer such reasons for cessation as: insufficient milk, nervousness, nipple irritated; most M's said they preferred self-demand schedule but showed markedly contrasting behavior.

SOURCE: S. Brody, *Patterns of Mothering*, New York: International Universities Press, 1956, pp. 287–371.

Fortunately, there is available a comprehensive study in which the separate and interactive effects of five major independent variables were considered in relation to subsequent adjustmental behavior. Heinstein published a monograph in 1963 that dealt with the relations of type of feeding, duration of

nutritive sucking, marital adjustment of the parents, warmth of the mother, and nervous stability of the mother, on the one hand, and behavior of the children, on the other [11]. The subjects were 47 boys and 47 girls, part of the Berkeley Guidance Study conducted by Macfarlane. They had remained in this study from infancy through 18 years of age.

Insofar as breast feeding and duration of nutritive sucking, considered separately, were concerned, no significant advantage could be demonstrated for either variable. There were some sex differences, however. But when feeding practices and interpersonal factors were considered together, the story was different. Thus, for example, it was found that girls who were formula-fed by warm mothers had fewer adjustment problems than girls formula-fed by cold mothers or than girls who were breast-fed by either warm or cold mothers. There were no significant interaction effects, of this kind, for boys. In the case of boys, interaction effects did show up for interpersonal factors and duration of nutritive sucking. For example, when boys from good interpersonal milieus were nursed for longer periods of time, there was better personal adjustment.

This type of study is very significant in many ways. In the first place, it is a longitudinal study and is not based on retrospective reports made by adults about their early childhood. In the second place, results are analyzed separately for each sex. And, finally, both single-variable and interactive-variable analyses are available. Among other things, such research demonstrates how complex the problem of personality development really is. However, this study does not evaluate adequately some aspects of the problem we posed at the beginning of this section on breast feeding. For example, are there critical periods which affect subsequent development differentially? And are results of over- and undergratification similar or different?

There is an earlier study which gets at some of these other aspects of the problem. Yarrow presents the findings from a longitudinal study which considered breast feeding, duration of nutritive sucking, and length of feeding sessions [12]. There were 26 males and 38 females in this study. The findings do not seem explicable in terms of simple reinforcement theory, but they are compatible with a phase-specific hypothesis such as Freud and others have suggested. It was found, for instance, that late-weaned children show more indications of problem

behavior (thumb-sucking) than early-weaned children. But it was also found that short individual feeding sessions during the first six months are significantly related to thumb-sucking. These kinds of findings suggested to Yarrow that oral drive varies as a function of the developmental level. During early infancy insufficient feeding experience (underindulgence) leads to fixation. But prolonged oral satisfaction (overindulgence) after oral drives begin to wane also leads to fixation.

Lois Murphy and her associates have been conducting an extensive study of factors influencing "coping behavior" during the preschool years [13]. (See Chapter 4 for further discussion of coping behavior.) Such items as sense of security, sense of self-esteem, clarity of perception, and ability to deal effectively with factors in the environment were considered as part of coping behaviors. She found significant positive correlations between appropriate oral gratification and these measures. She concluded that such experiences lead to lower tension levels, good differentiation of the self from the environment, and effective self-concepts.
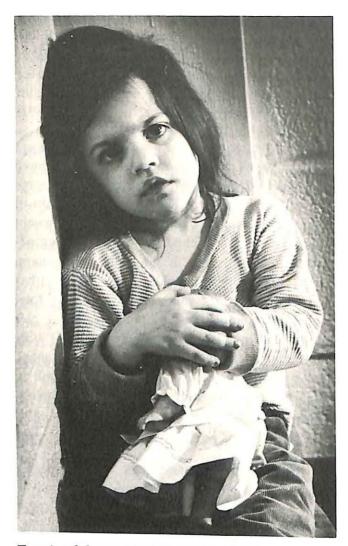
Two other kinds of evidence will be cited which bear upon the present problem. One of these shows that babies are very responsive to the personality of those who nurse or take care of them. Margaret Fries compared the behavior of babies who were taken care of by compulsive nurses with a supposedly equivalent group of babies who were taken care of by noncompulsive, secure nurses [14]. Both groups of babies had the same diet and the same feeding schedules. The compulsive nurses treated all of their babies in much the same way, paying attention to the mechanical details of feeding in a careful manner but not paying particular attention to the reactions of the babies. On the other hand, the noncompulsive nurses were much more gentle with their babies and varied their behavior to attempt to adapt it to the apparent needs of the babies. The most significant differences seemed to be that the babies handled by compulsive nurses developed more anxious, startled reactions to usual stimuli, whereas the other babies not only showed fewer reactions of this kind but ingested more food and became more responsive to their nurses.

The other evidence is derived from a study that Escalona made of the relationship between the personality characteristics of infants and their mothers [15]. Attention in this research was focused on the problem of feeding disturbances, e.g., refusal to

eat. It was found that feeding disturbances tended to occur much more frequently when the mothers were emotionally "high-strung." Their babies also were "high-strung" and showed difficulties in the whole food-intake process. Whether constitutional and possibly hereditary influences contributed to the relationships was not determined, but the evidence is suggestive that such factors were not the primary determinants.

We must conclude from the evidence available at the present time that many of the issues related to early feeding experiences are still largely unresolved. That early experiences have some significant effects cannot be denied. However, the duration of these effects is still speculative; the evidence that a warm, secure relationship between mother and child during the feeding experience leads to less disturbance in the child, or to more security in the total personality in the child, seems likely. It has not been demonstrated, as yet, which factors in this total relationship, singly or in combination, are most significant. Nor has it been demonstrated how long such effects persist or what other factors may counteract such effects or reinforce them. Only longitudinal studies with appropriate controls, based on replicable and objective types of observations or measurements, can supply conclusions that can be relied on with great confidence.

THE EFFECTS OF OTHER EARLY EXPERIENCES In considering the possible influence of various kinds of experience upon the individual (human or animal), we shall have to be constantly alert to two interrelated problems. One of these is the possible significance of a *given kind of experience,* by itself or in combination with other types of experience, for *short-* and *long-term* effects in subsequent behavior. The other is the relative *availability* (or *deprivation*) of the total pattern of experiences. Some kinds of *deprivation* tend to enhance the effects of the experiences available to the organism, since the latter now become more prominent. Increased *availability* of some kinds of experience tends to reduce the availability of other kinds of experience, since these now occupy less time in the individual's life-space. In both cases an increase or decrease in the set of experiences influences the amount of time remaining for the other experiences. For example, if an infant experiences two hours of rocking and caressing experiences each day, he has available *less time each day* for other types of experiences had

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Emotional deprivation? Bayer from Monkmeyer

by another infant who is rocked and caressed for only one hour per day.

Deprivation experience in animals Experimental psychologists have become interested in the effects of deprivation experiences in animals because of the relevance of this issue to human personality development. It is much easier to employ experimental manipulation of environmental stimuli with animals than with humans, but it is important to exercise caution in generalizing from animal studies to the possible significance of any conclusions for humans. Recent studies have centered on the relative effects of handling (i.e., stroking and petting) versus deprivation of such handling. In one such study, rats

"handled" a great deal in infancy were compared with another group in which this was not done [16]. Both groups of rats were later given tests involving severe environmental stress, such as immobilization and deprivation of food and of water. The "handled" group was able to withstand the effects of the stress (deprivation) far better than the "nonhandled" group. There was less physiological damage to internal organs and the gastro-intestinal tract. In fact the "handled" group was even able to survive, for many more hours than the other group, the effects of deprivation of food and water.

In another study, by Thompson and Heron [17], the effect of social isolation in the lives of puppies was studied. Two groups of puppies were compared, after an experimental period, upon a variety of tests involving the learning and retention of mazes which were thought to measure "memory," "attention," and learning ability. One group was raised in cages in which they were isolated from external stimulation (except for relatively short periods during feeding) for the first seven and a half months. The other group had "normal" stimulation in the laboratory. They were able to see and interact with other puppies and humans during this same period. A comparison of the two groups after these differential experiences showed that the deprived group was significantly inferior on all of the be-havioral tests.

In another study, the effects of the deprivation upon the behavior of puppies was explored with respect to the period when the deprivation was applied. In this study, Pfaffenberger and Scott [18] found that the critical period for the most signifi-cant effect of "social experience" was at twelve weeks of age. If puppies were "ignored" after this age, that is, if they were not handled, played with, and the like, they were unable to learn to "take responsibility" or successfully to complete guide-dog train-ing. Deprivation before this critical time (12 weeks) did not have similar effects.

Riesen investigated the effects of light-deprivation in kittens and chimpanzees [19]. Deprivation was begun shortly after birth and continued for varying periods through infancy and beyond. It was found that, when light-deprivation was continued beyond infancy, chemical and atrophic changes occurred in the retina and that these changes were then irreversible. The effect of light-deprivation was more marked in the higher than in the lower mammals.

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That the effects of deprivation are not altogether on the negative side is indicated in a study by Seitz [20]. In this study the effects of social isolation on kittens were investigated. Kittens were removed from their mothers and placed in individual isolation. Some were isolated at two weeks of age, others at six weeks, and still others at twelve weeks. At nine months the three groups were compared on various indices. The twelve-week group (considered the overprotected group) showed greater fear responses in shock situations than the other groups. However, this group seemed less fearful in other situations. Kittens in the two-week group showed more alertness but at the same time were more "anxious" and aggressive. They were also slower in some learning tasks and were less able to compete for food. Some even developed an asthma-like state. The six-week group showed the least over-all disturbance in most situations.

Over the past decade, studies on the effects of deprivation in animals have become increasingly more frequent. More to the point, these studies have become more sophisticated with respect to research design and theoretical orientation. The results have not been unambiguous, and many issues remain to be explored. However, a number of important inferences may tentatively be drawn. The first of these is that, generally speaking, deprivation of sensory and other experiences during early stages of development does influence the subsequent development of behavior in various ways. The second is that for many functions there is a *critical period* in development, different for different functions and different for different species, before and after which the effects are significantly different. The third is that the effect of deprivation tends to be differential, so that, while some functions are impaired, others are enhanced. The fourth is that deprivation during a critical period serves to reduce the effectiveness of the over-all adaptiveness of the animal even though some functions may be temporarily improved. And, finally, there is clear evidence that some effects of early deprivation, especially if continued, are so severe that they lead to irreversible effects and to profound physiological and structural change as well as to behavioral change.

Effects of different kinds of experience in young animals The work of the Wisconsin laboratories with monkeys offers a great deal of insight into the effects of differential types of early experience. In one series of studies, Harlow investigated the effects of various kinds of "mothering" [21]. One group of young

monkeys was separated from their mothers and "nursed" by surrogate, mechanical mothers. Two such surrogate mothers were available, one made of wire mesh, which offered no soft physical contact, the other made of wood that was was covered with sponge rubber and terry cloth and thus offered soft physical contact. As Harlow puts it, the soft mother was "soft, warm and tender, a mother with infinite patience, a mother available 24 hours a day, a mother that never scolded her infant and never struck or bit her baby in anger." The "hard" mother had the same characteristics except for her lack of softness. Under varying conditions of experimental manipulation to stressful situations, it was concluded that, when monkeys were free to choose the preferred surrogate mother, they showed increasing responsiveness to the cloth mother. They would often clutch her, rub against her, and rush to her. When frightened, they would turn to the cloth mother. Monkeys raised with cloth mothers were found to be less fearful, showed more exploratory behavior, and were more able to withstand stress. The converse findings were true of the monkeys whose experience had been with the wire mother. Thus, Harlow concluded that the evidence favors "the overwhelming importance of the variable of soft body contact that characterized the cloth mother, and this held true for the appearance, development, and maintenance of the infant–surrogate-mother tie." He also concluded that "nursing or feeding played either no role or a subordinate role in the development of affection . . ." [22].

Two other studies highlight additional findings which are relevant for our present discussion. One is interesting because it demonstrates the different effects that can be caused by varying the *intensity* of experiences [23]. In this study, mice were subjected to different levels of electric shock during infancy. When the magnitude of the shock was low, it facilitated avoidance-learning in later adulthood, but, when it was high, it interfered with this later learning. Thus, in addition to the type of experience and the age at which an experience affects an individual, as we have noted in our previous discussion, the intensity of the experience (in this case, shock) has a differential and possibly opposite effect. Another study, with Siamese kittens, in which the factor of "gentling" as an experiential variable was investigated, showed that this factor influenced even the speed and depth of coloring of the kitten [24]. These authors believe that the differential effect is produced indirectly

as a result of hormonal and neurophysiological changes produced by "gentling." This kind of inference about the effects of favorable or unfavorable "emotional" experiences upon aspects of physical functioning and indirectly upon behavior of the organism is supported by a wide variety of studies upon both animals (principally) and human infants.
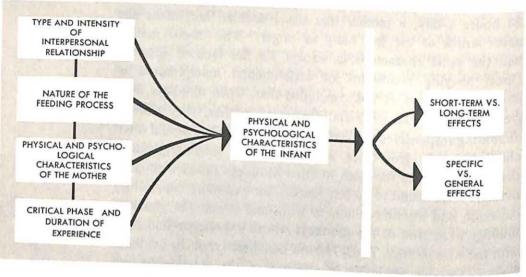

FIGURE 3.2 *Some of the interacting factors influencing early personality development.*

Studies of the kind we have described, and related studies, suggest that early experience has significant consequences for the maturation of the organism, for the time and quality of the performance which is manifested, and possibly for the enduring aspects of personality development. In the case of Harlow's monkeys, the type of body contact experienced in infancy certainly had long-lasting effects upon adult behavior—effects which profoundly altered the course of even sexual behavior in adult life. Figure 3.2 summarizes the kinds of factors which have been proposed as important in influencing the early development of the personality.

Attitudinal Orientation to the World

One of the critical questions concerning the dynamics of personality development is that which asks, "How does the individual develop an attitude toward himself and toward the world

which, in general, may be characterized as trustful?" Some writers have referred to this attitudinal orientation as one of *basic trust* [25]. Others have characterized the variable which is involved as that of security-insecurity [26]. In any event, many observers have noted that people differ with respect to the degree of self-confidence they display in meeting new situations in life. On the one hand, some people show a high degree of appropriate self-regard and have the attitude that they can succeed in dealing with most life-situations. Even if they fail, they are not utterly crushed. On the other hand, there are those who seem to anticipate failure, have little regard for themselves, and show disruptive behavioral consequences when they are thwarted. The first group tends to be optimistic, friendly, realistically oriented, and strives appropriately toward accomplishment of immediate and long-term goals. The other group tends to be pessimistic, is suspicious of others, is critical of their lot in life, and becomes easily frustrated in dealing with difficult problems.

BASIC TRUST   What we are concerned with, then, is how this orientational attitudinal variable toward life is learned. One writer (Erikson) suggests that the learning of this attitude is unlike the learning of specific skills or specific behaviors but depends instead upon the opportunity afforded the individual to develop his potential for action, thought, and feeling without undue threat and interference [27]. It may depend, then, upon a pattern of early conditions which fosters positive self-regard, so that the individual learns to anticipate that his psychological needs will usually be gratified. It does not depend, primarily, on the mere satisfaction of physical needs but upon *the ways in which these needs are met*. Erikson suggests that it has its beginnings as the infant develops a sense of self-awareness, particularly during the second half of the first year of his life. During this period the nature of the total relationship between the infant and the person who takes care of him (in our culture, usually the mother) exerts a profound impact upon his developing sense of basic trust in himself and the world. When this total relationship conveys *security* in meeting his needs, *warmth* in the relationship, and *minimal frustration*, the infant learns that the world can be trusted. And, when the world can be depended upon in this way, basic trust extends to the self-system as well as to the attitudinal orientation to the world.

Erikson's formulation, which is sketched here without consideration for all of the relevant detail, is based upon clinical observations of disturbed youngsters who failed to develop a sense of basic trust and is supported by reference to anthropological research in varying cultures. This viewpoint clearly suggests that it is the whole pattern of the interrelationship between infant and mother that must be considered as crucial rather than specific needs and their gratification or frustration. It does not imply that specific methods of handling child-training (such as control of elimination or weaning from the breast or bottle) have no significant effects upon the general attitude of trustfulness but rather that these effects can be properly understood only in terms of the total pattern of the child-mother relationship.

The Basic Mother-Child Relationship

A recent comprehensive study by Sears and co-workers has shed some light upon this problem [28]. In this study 379 mothers and their kindergarten children were evaluated by means of intensive interviews with the mothers. The mothers were selected from two suburban communities and comprised samples of Protestant, Catholic, and Jewish faiths of varying socioeconomic levels. The interview data were recorded mechanically and were analyzed into 44 scales of parental child-rearing practices. On the basis of the analysis of these data, five clusters of factors were isolated. These were highly significant in predicting the personality attributes of the children. One cluster, called *permissiveness-strictness,* consisted of scales of severity in toilet training, use of physical punishment, restrictions in making noise, and permissiveness in using aggression toward siblings. Another cluster was called *warmth of mother-child relationship.* These two clusters were the most important ones in terms of their relationships to (and possible effects upon) child personality. When the relationship was one that could be characterized as *warm,* the children tended to be secure, whereas, when the relationship was characterized as *cold,* the children tended to be aggressive, had frequent feeding problems, were persistent bed-wetters, and, in general, could be characterized as insecure.

Many other patterns of relationships and their consequences

were explored. The data indicated, in general, that the over-all pattern of the relationships, as reported, was important in determining whether children tended to be secure or insecure. It should be noted, however, that a particular pattern was *not* invariantly accompanied by the typical personality effect. This indicates that other factors must have contributed to personality development. For example, the effects of the pattern of relationships seemed to depend on other factors in the familial environment, such as whether the parents were middle-class or lower-class individuals. Although these data do not bear precisely upon the nature of the formative period in the development of basic trust, as conceptualized by Erikson, they lend suggestive support to his thesis.

Some research support for the thesis that the pervasive nature of the relationship between mother and child is highly significant in determining the general way in which the personality develops, whether it is secure and matures progressively or whether it is insecure and fails to mature, is offered by Spitz in his study of three groups of children [29]. These infants lived under three types of conditions: one group lived with their mothers in their own homes; another group lived in a nursery in which they had contact with other infants and some regular attention by substitute mothers; the third group lived in a hospital and had no regular substitute mothers. Spitz found that when infants were deprived of regular, consistent "mothering" (which might and did vary from "mother" to "mother"), they were retarded in their over-all development, both physical and psychological. They tended to become progressively more apathetic, were unable to respond to good diet or even medical care as they became physically more debilitated, they became ill, and many died. Spitz concluded that when infants were deprived of consistent "mothering" they failed to mature in either physical or psychological characteristics. He thought that his study showed that infants needed some consistent type of relationship with a mother-figure. He found that the effect of separation from the mother was most devastating (1) when it occurred during the second half of the first year of life and (2) when a consistent relationship had already been established.

Spitz's studies have been severely criticized on the ground of inadequate methodology, mainly in terms of inadequate controls of several important variables [30]. Although the methodology can justifiably be criticized, the extremely great differ-

ences among groups, the frequent highly abnormal conditions in the hospitalized group, including many deaths despite very good physical care, and the progressive nature of the deterioration when consistent mothering was unavailable, can hardly be overlooked. It is clear that some specific conclusions of Spitz's concerning the value of handling, rocking, and other physical and psychological interchanges between "mother" and infant which he regards as important may be questioned. But the overriding conclusion that a period of consistent relationships is necessary for healthy personality development—or its corrollary, that loss of such a relationship, when it has once been available for a period of time, can have devastating effects upon the security of the infant—seems entirely justified.

Another study, by Dennis, completed a few years before Spitz's, has been interpreted by some as being in opposition to that of Spitz [31]. Dennis reported that two infants who were raised under conditions of restricted practice and minimum social stimulation from the age of one month to fourteen months showed no retardation in behavioral or emotional development. The two fraternal twins in the study were raised in two adjoining cribs with plain walls and nothing else in view. They had no toys to play with, and they were restricted during eating and bathing so that they could not practice "sitting up" or reaching during these periods. They were left alone except for feeding and bathing. When they cried, they were fed or were changed with reasonable promptness. In these and other ways the effort to provide restricted practice and minimal social stimulation seems to have been satisfied. Dennis reported that during the first nine months no retardation was noticeable. Physical and emotional development seemed to proceed in accord with normative standards. Later, however, there were definite indications of progressive retardation in various abilities. Dennis reported, however, that neuromuscular learning, which was retarded, was easily compensated for by subsequent practice. It was not reported, nor was any attempt made to determine, whether the transient retardation was accompanied by emotional disturbances in either of the twins. Nor could the effects of the study be definitive in other respects, since there was no way of knowing how comparable these twins were to other infants with whom they were compared on various types of normative data. Furthermore, it was later learned that one of

the twins had a disability on one side of his body (a condition diagnosed as hemiplegia, likely due to brain injury at birth).

In evaluating this study, one can raise many questions. However, we should like to focus on the problem of *consistent relationship* with a "mother-figure." If, indeed, the restricted conditions did not produce any significant retardation in general physical and emotional development, it may have affected the development of basic trust in these children. On this point, unfortunately, there is insufficient evidence. In any case, there was a consistency in the relationship—a consistency which the infants were able to rely upon completely. Thus, if the results are to be accepted at face value, they are in agreement, or at least are not in contradiction, with Spitz's finding that consistency is essential for avoidance of traumatic effects upon physical and emotional development. Dennis' study does not support any hypothesis which argues for the necessity of other elements in the "mothering" process, such as the need for fondling, rocking, frequent social stimulation, and the like. It does, however, offer support for the effectiveness of a highly consistent pattern of infant-adult relationship—one that could lead the infant to trust his world.
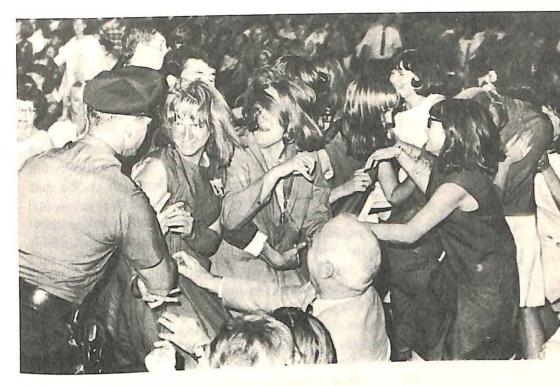
From evidence of the kind we have cited, it may become clear how complicated is the problem of deducing causal connections between conditions of rearing children and personality consequences. One question concerns the meaning of the term *consistency*. What is the optimal condition of consistency and during what period or periods? And for which personality consequence are these conditions relevant? Since, even in Spitz's studies, not all children were equally affected or affected to the same degree by separation or by deprivation of consistent "mothering," what factors exaggerate the effect and what factors minimize it? Under which conditions is the basic attitudinal orientation toward the world of trust or distrust enhanced or decreased? The reader will wish to consider other questions which this general problem suggests.

Nevertheless, the evidence cited and other observational, anecdotal, cross-cultural, and experimental evidence seem to indicate that children do differ in the kind of basic attitudinal orientation they have to themselves and the world and that conditions during infancy and early childhood are highly important to such an orientation, at least as primary contributors.

The Family in Relation to Personality Development

For a long period of time in the life of the child, during his formative years of development, the family is the main social institution which directly affects, guides, and controls him. In most Western cultures the primary agent for these responsibilities, during infancy and at least early childhood, is the mother. It is therefore not surprising, as we shall learn, that most studies of the effects of family experiences have focused on interactions between mother and child, with relative neglect of the father's influence. During preschool years the father usually begins to assume a more important and direct role in relation to the child's upbringing. It is during this same period that the influence of siblings and other relatives also acquires greater importance. During this whole period, and even in later years, the effects of the culture in which the child lives are experienced through the focus of the family's interactions with the child. Thus the nature of this complex set of family experiences must be understood if we are to gain some comprehension of factors which affect the child's personality development. Because it is so complex, various investigators have tried to limit their studies to some major aspects of the family constellation. Similarly, we shall focus our attention on a few major considerations, such as the interactions between child and parents, the interactions among siblings, and the general emotional climate of the family.

THE FREUDIAN POSITION Sigmund Freud focused attention on the importance of intrafamilial experiences upon the personality development of the child through his highly creative theory of psychosexual development. As we shall see in Chapter 5, he tried to develop a "metapsychology" of personality development in which the bases were formulated for a systematic theory. His comprehensive formulations, based primarily upon clinical observations of neurotic adults, were constantly revised by him during his own lifetime, and revisions have continued to be made by his disciples, as well as by his dissenters, to this very day. The impact of his theorizing, whether for "good or bad," has been tremendous, not only upon psychology but upon many aspects of human endeavor, such as art, education,

Future mothers of America.

IRWIN GOLDSTEIN

science in general, and even religion. We shall discuss, primarily, the central importance which Freud attributed to certain aspects of the family situation as a basis for reviewing some important empirical evidence which has been gathered in recent years.

The anal period We have already commented briefly on some aspects of Freudian theory in discussing, earlier in this chapter, the oral period of psychosexual development. We shall therefore turn our attention to the next period in psychosexual development which Freud suggested—the anal period. According to Freudian theory, from about the eighth month of life through the third year, the anal zone becomes the primary zone for "erotogenic" or psychosexual stimulation [32]. The child experiences pleasurable sensations when pressure upon the anal sphincters (valvelike muscles which control defecation) mounts to the point that defecation results. Involved in this activity are not only the anal sphincters but also the lower end of the intestinal tract, the anus, the buttocks, and the surrounding region. Indeed, it might be said that the whole child participates in the act of defecation as he becomes perceptually aware of his own reactions and of the reactions of those around him who participate with him in various ways as he performs this function. Central to the Freudian position on the pleasure or pain which the child originally experiences in defecating is that it is the *relative* reduction or increase of tension (through pressure on the anal sphincter) which produces these phenomena. As the tension builds up, it is experienced as painful, and, as it is decreased in the act of defecation, it is experienced as pleasurable. Moreover, anal behavior, that is, retaining or expelling feces, may become a method through which tension arising in other parts of the body may be dealt with.

Even more important from the viewpoint of the developing personality of the child, the complex set of experiences which are involved in so-called toilet training is part and parcel of the child's first social interactions or first form of social learning. The child's need to defecate when and where he wishes is in conflict with the social needs of reality as represented by his mother, who wishes to teach him to behave in a socially more appropriate manner. The interactions of the needs and capacities of the child, on the one hand, and of the needs and methods employed by the mother, on the other, furnish significant models for conflict and resolution or frustration. Chil-

dren vary in the rate of biological maturation and their physical readiness to develop voluntary control over anal activity. They also vary in their temperament and emotional reactivity at the time when toilet training is instituted. On the other hand, mothers vary in their "philosophy" of toilet training, their methods of toilet training, and their own personality attributes, among other things. All of these factors are relevant to the way the child experiences the learning of appropriate toilet habits. They also become relevant to the concomitants of this learning —his attitudes toward his own competency in gaining mastery over a basic biological need, his pleasure or pain connected with the total act of defecating, his methods of dealing with the conflict situation which the mother's demands create in relation to his own inner needs, his attitudes toward his mother as a punishing or rewarding or understanding person, and the like. The child may learn to perceive the mother as hostile or demanding, or he may learn to perceive her as supportive and accepting. The Freudian theory posits that the child's *narcissistic* position during early infancy, during which he loves himself, sees himself as omnipotent, and tends to respond only in terms of his own needs, is gradually abandoned in favor of a reality-testing position in which he learns to gain pleasure by pleasing his mother while gaining mastery over his own biological functions—if conditions are favorable. He begins at this stage to interiorize his mother's values; in other words, he *identifies* with her. He learns to obey, conform, and to inhibit behavior according to his mother's wishes. Her wishes and values gradually become his own. He also gradually learns to master his *ambivalence* toward his mother, that is, he learns that it is possible to continue to love his mother even though she is a frustrating object at times. And he learns to give up some of his feelings of omnipotence. He thus prepares the stage for achieving a less dependent attitude as he gains mastery in terms of reality rather than fantasy.

The child's learning during this stage of development may be significantly influenced by his mother's overindulgence or overpunitiveness. If he is praised excessively for exercising bowel movements upon command, he may learn to overvalue this activity, and thus he may begin to learn the general principle that it is highly important to please others. The generalization may then follow that it is important, in getting along in this world, to please others even at one's own expense. On the other

hand, if the mother is overly punitive in dealing with the problem of bowel control, the act of defecating may become an arena in which wills are pitted against each other, and the child may begin to learn that it is necessary to be defiant or to be excessively compliant. These are but a few of the many complex derivatives in character development which have their beginning and may become "fixated" (i.e., overlearned) as a consequence of this highly emotion-laden early learning experience, according to Freudian theory. Fixated anal traits which *may* persist into adulthood include: *parsimony, petulance,* and *pedantry.* There is some evidence that, at least in cases of psychopathology, these traits in adulthood had their origins during the anal periods of development (see Chapter 6).

The oedipal period The next period in psychosexual development is that which involves the *oedipal conflict,* according to psychoanalytic theory. This is the phallic stage of development, during which the primary sexual organs assume erotic primacy. The third year normally marks the beginning of this period, and the sixth year normally marks its termination. It should not be assumed that, with the onset of the oedipal period, oral and anal drives have been eliminated. The theory maintains, rather, that such drives become subordinated to phallic drives, which now assume ascendancy. It is also suggested that the onset of this period is largely determined by the biological maturation of the individual, and evidence has been accumulated which indicates that the genital region does produce pleasurable reactions from stimulation at this time [33].

The psychosexual development of the two sexes differs during this stage, owing presumably to both biological and cultural factors, and we shall sketch the characteristics of the personality development of the boy at this point, referring to that of the girl a bit later. Typically, the boy, who has already developed some identification with his mother and who has interiorized some of her personality characteristics, now becomes aware of increased sexual longing for her. At this time he also becomes more critically aware of the dangers he faces because of these longings since they bring him into more or less direct conflict with his father. The father is perceived as a rival for the mother's love and affection and is feared because he is: (1) bigger and stronger; (2) loved by the mother; (3) needed as a model for identification by the boy if the latter is to assume some of the attributes of the masculine role. The oedipal

conflict acquires high emotional intensity as the boy's sexual wishes for the mother and his intense fear of his father come into focus. He becomes fearful that he will be punished because of his sexual longings and that his penis will be cut off in retribution.[2] This fear is partially overcome through the work of repression (see Chapter 4), but that the conflict is very active may be inferred from the changing content of dreams and an increase or emergence of night terrors during this period [34]. The castration threat finds expression in our culture in several ways, such as: (1) the taboo against the public expression of sexual behavior; (2) the increasing awareness in the boy of the differences in the anatomy of the two sexes, which he has difficulty in understanding and is often given little opportunity to discuss; and (3) the boy's sexual drives require that he begin to assume a more "masculine" role, but the familial pattern clearly relegates him to a more subordinate (i.e., less masculine) role than he might have in other types of cultures.

According to Freudian theory, the oedipal problem is only partially solved during the phallic period. Several things normally occur. In the first place, the boy begins to ally himself with his father through identification with him, and he gains some satisfaction from this new relationship. In the second place, since, in fact, he is now more able physically, mentally, and emotionally to be more independent of his mother, he begins to rebel against his mother as he becomes less dependent upon her. This newer orientation concerning his relatively more independent role has been termed *satellization* by Ausubel, a social psychologist [35], who accepts the dynamics of the Freudian explanation but rejects the specific role of sexuality as a primary causative factor. And finally, repression of his oedipal wishes enables the child to renounce his sexual strivings, in part, and to sublimate them into other channels of activity. Freud accounts for the child's intense intellectual curiosity during this period and the extensive character of his exploratory activity as a function of his heightened sexual curiosity. Similarly, he accounts for the reduction in sexual interests at an explicit level, as well as for the increasing inhibition of exploratory behavior, during the next phase of psychosexual development—the

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[2] This fear, called the *castration complex*, was first noted by Freud when his patients recounted anxieties of this kind. The phenomenon has also been reported in research studies of children's fears. See [34], for example.

latency period—when repressive forces have succeeded in their operations. But we shall delay discussing the latency period for a moment while we examine the model of interpersonal relationships which the oedipal period suggests.
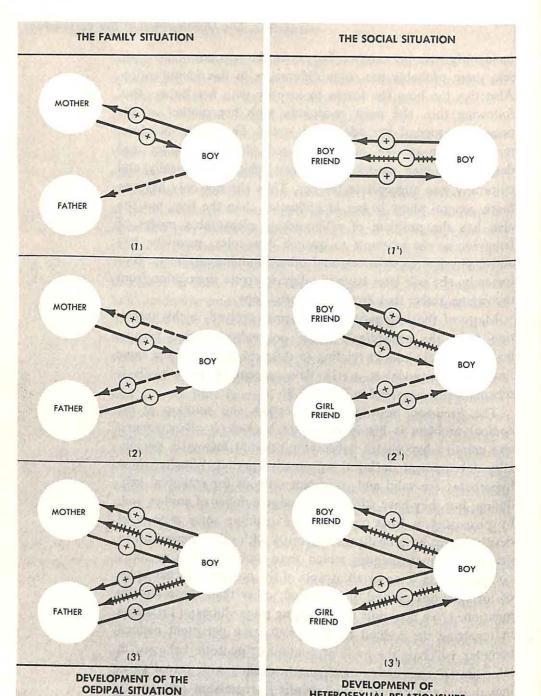
Prior to the oedipal period the child had developed an intense relationship with only one person—his mother. In this relationship he was first omnipotent during infancy. His every wish seemed to be gratified upon command (typically crying). Yet, at the same time, he was highly dependent in almost all respects upon this very significant person. As he moved through the next period of psychosexual development and gained his first experiences in situations where his "will" opposed that of his mother's, he became somewhat less dependent, less omnipotent, and gradually and increasingly more ambivalent toward his mother. These experiences enabled him to learn to deal with the bilateral relationship in a primitive but realistic way. At this stage he learned the prototypes of all forms of interpersonal relationships. The third party to the familial drama, the father, had not yet fully entered the sphere of interpersonal relationships except as a distant or ghostlike character. However, during the oedipal period the problem became one involving a trilateral relationship, in that two other persons were significant in determining the kind and amounts of gratification the boy would experience as well as the kind and amount of frustration. Thus, the beginnings of a general pattern of interpersonal relationship began to take shape in the oedipal phase of development, for now the boy had to learn to deal with two different and significant people in a close, emotionally charged pattern of relationships. Not only this, but he had to learn to deal with two people of different sexes who had different stimulus values for him since each could only gratify him in somewhat different ways. Thus, during this phase of development he had to learn to deal with the complex patterning of means to satisfy his affectional requirements—how to learn to like, and be liked by, two individuals at the same time without fear of rejection by one if he favored the other. He also had to learn to maintain positive interpersonal relationships while experiencing satisfactions as well as frustrations (in other words, how to solve the problem of dealing with ambivalences).

The development of the girl's personality during the oedipal period is purportedly more complicated than that of the boy's, according to psychoanalytic theory. Like the boy, the girl learns

to identify with her mother, but, since the two are of the same sex, there probably are some differences in this identification. Also like the boy, she learns to identify with her father. But, following this, she must re-identify with her mother as she progresses toward her adolescent status. She must, therefore, modify some of her newly acquired phallic attributes and develop feminine modes of behavior which, biologically and culturally, are appropriate for her. Thus she not only has one more general phase in her identification than the boy, but she also has the problem of relinquishing pleasurable modes of behavior as she attempts to assume new roles: passivity, less active physical experiences, and other feminine attributes. Biologically, she will later have to adapt to erotic stimulation from the vagina, rather than from the clitoris alone.

Many of the interpersonal problems involved in this transition from the preoedipal to the postoedipal period involve learning social skills in relating to different people at the same time. The progression in the development of these skills is schematically presented in Figure 3.3.

The Freudian position on the nature and solution of the oedipal problem is highly important because it offers general and creative hypotheses concerning relevant factors in personality development during this formative period. Whether these hypotheses are valid and consistent remains for empirical validation; but they have stimulated a large number of studies and, by proposing at least one way of explaining some aspects of development, have challenged theorists with other viewpoints to present alternate theories which were more rigorous or more compelling, on some or all aspects of the problem. As examples of formulations arrived at by Freud, other than those already mentioned, we may note the following propositions: (1) failure in resolving the oedipal conflict produces a persistent oedipal complex which is the basis of continuing neurotic behavior in later life; (2) excessive harshness in dealing with sexual strivings during the phallic period results in regression (return) to earlier modes of sexual gratification and thus to perversions; (3) inadequate identification with the same-sexed parent results in homosexual development of the individual; (4) an accepting and warm relationship among all three partners in the familial drama encourages more rapid personality maturation and secure general relationships in later life. These are only a few of the most general propositions which have stemmed from

THE FAMILY SITUATION	THE SOCIAL SITUATION

DEVELOPMENT OF THE
OEDIPAL SITUATION
(A)

DEVELOPMENT OF
HETEROSEXUAL RELATIONSHIPS
(B)

FIGURE 3.3 *Comparison of familial and heterosexual progressions in interpersonal relationships. In column (A) a boy in the first phase (1) is positively attracted to his mother, who loves him, while he is scarcely aware of his father; in phase (2) his positive attraction to his mother has weakened, while a moderately positive relationship with his father has begun; in phase (3) he has positive but slightly ambivalent relationships to both parents. In column (B), the boy has a positive but slightly ambivalent relationship with his boy friend in (1'); in (2') he has become positively aware of a girl; in (3') he has developed positive but moderately ambivalent relationships with both sexes.*

Freud's theory. Many others are available in some of the recent reviews of this theory [36, 37].

The latency period Following the phallic phase of development, the latency period begins, and it continues until physiological changes at puberty usher in the genital phase of development, when sexual strivings arise with increased intensity and old oedipal problems are revived. These and the emerging problems of adolescence have to be dealt with. During the latency period, overt sexual interests and behavior decrease. Boys become more self-conscious, tend to be embarrassed in the presence of girls, and prefer group activity with other boys [38], and the nature of intellectual behavior changes as repression of sexual impulses increases. There is evidence to show, for example, that when the oedipal period is *traumatic* (that is, when there are serious frustrations), far more inhibition of intellectual development occurs than when it is not [39]. There is also evidence to show that even in normal individuals there are significant personality and intellectual differences in the behavior of pre- and postlatency individuals which are consistent with the theory of psychosexual development during latency [40].

The genital period The last phase of psychosexual development is the genital period. The object of the sexual drives during this period is sexual union with a member of the opposite sex. Since such union is sanctioned only by marriage in our society, and since the age of marriage is generally delayed until well beyond the teens because of the increasingly longer periods of vocational or professional preparation which are required, the individual meets considerable reality frustration in gratifying his sexual needs in a mature manner. Adult genitality involves appropriate "object love," in which the aim of sexual drives is satisfaction from the total interpersonal relationship between the partners. This involves not only satisfaction from the genital sexual experience but mutual and reciprocal satisfactions in offering and receiving affection, adaptation to the needs of each of the partners on a psychological as well as a physical level, and the retention of pregenital satisfactions, such as looking, fondling, and kissing, as an appropriate, but subordinate, part of the genital experience. The genital phase continues until senility, which often brings a return to markedly regressive behavior.

Normal genital development in the psychosexual sense is

dependent, in the first place, upon adequate development through the previous stages of psychosexual development or upon correction for prior maldevelopment. It leads to a successful choice of a partner in marriage (in our culture), to effective work habits, to the capacity to be creative in interpersonal relationships as well as in work, and to adequate sexual gratification as part of the total pattern of effective living. Many individuals never attain true adult sexuality, and many others, having attained it in some precarious fashion, regress under stress or frustration to pregenital forms of adaptation.

Since the crux of the Freudian position on healthy personality development lies in the nature of familial experiences during the preschool and early school periods, we shall now examine some of the evidence concerning this problem.

PATTERNS OF FAMILY RELATIONSHIP On an a priori basis one could attempt to categorize the possible patterns of relationships within the family in an almost infinite number of ways. Nevertheless, both in terms of common observational evidence about the ways in which families function and, more specifically, on the basis of curent theories of personality development, we can make some decisions on how to go about this very complex job. To begin with, we shall examine some important attributes of the child-parent relationship, then consider some evidence on the more general aspects of the emotional climate of the home, and finally turn to problems concerning the effect of sibling relationships on personality development. Clearly, we may be excluding from consideration some important aspects of the problem, but we shall have to content ourselves with the knowledge that, at least, we have sampled the more important aspects of intrafamilial relationships. We shall conclude this section by considering the problem of the degree to which parental attitudes are consistent. The relative consistency of parental attitudes may be expected to have important effects upon the child's personality.

Child-parent relationships The first question to which we shall direct attention is the effect on personality development of acceptance or rejection of the child.

It appears that acceptance or rejection of the child is one of the basic dimensions of child-parent interactions which affect personality development. When the child is rejected, for instance, he is denied other factors which might be useful to him

Child-parent interactions.

in his development. Studies of severely neglected children have shown that they are unable to make use of even intensive help provided by an experienced psychotherapist or are able to make only minimal use of such help [41]. Baldwin and his co-workers have concluded that "acceptance-rejection" is the "fundamental dynamic" which delimits all other aspects of child-parent interactions [42]. But what, exactly, is this "fundamental dynamic"? What is meant by "acceptance" or by "rejection"? Is it the degree of emotional compatibility between child and parent? Is it the degree to which the parent meets the child's biological and psychological needs? Is it the relative *appropriateness* with which the parent *deals with* (methods of child management) the child's needs? Or does it refer only to extremes of overt and communicated acts of acceptance and rejection of the child by his parent? Any or all of these ways of looking at "the dimension" of acceptance-rejection might be useful, but we should expect that different results would be found in studies using different approaches.

Any definition of the acceptance-rejection dimension implies that certain attributes of the behavior of the parent can be assigned to positions along a continuum of this dimension. If this is the case, then we have to examine the effect of acceptance-rejection in terms of the degree to which the phenomenon is manifested rather than in terms of its presence or absence. Unfortunately, most studies have dealt only with the over-all effects of accepting or rejecting parents without defining the degree of the behavior that was present.

Other problems with which psychologists have had to contend in studying this dimension of family life have also beclouded the issue and produced results which sometimes seem contradictory. One of these is the consistency with which a parent behaves in an accepting or rejecting manner over a period of time. It is clear that parents change in this aspect of their behavior. Some parents may find it difficult to accept an infant but easy to accept an older child; some parents may be able to act acceptingly when they are not under severe stress but are unable to function this way when they feel anxious; and some parents may be unable to accept the first child in the family but may later be able to accept this child when there are other children in the family.

Another problem concerns the degree to which the child *feels* accepted or rejected whether or not it was the intent of the

parent to have this effect upon him. For example, the same behavior of the parent which the younger child may have experienced as accepting when he was, say, two years old, might be experienced as rejecting when he was four years old and *his* (the child's) attempts to be more assertive or independent had come to the fore. And still another problem concerns the concurrence or disparity in acceptance-rejection by both parents, as opposed to each one singly. This problem may be illustrated by considering the possible effects on the child when he is accepted by the same-sexed parent but is rejected by the opposite-sexed parent, as compared with the reverse condition, when he is rejected by the same-sexed parent but is accepted by the opposite-sexed parent.

We are now ready to summarize three lines of evidence. The first deals with the effects of extreme rejection of the child by both of his parents, or by his mother, during the early formative years of his life. The studies by Spitz, to which we have referred earlier, have indicated that rejection of the child when he is deprived of his mother has devastating effects upon his personality. These findings have been confirmed in studies by Bowlby [43] and Aubry [44]. The effects of rejection differ, however, depending upon the point in the child's life when the rejection occurs. Other studies of "broken homes," in which either or both parents were unable to meet the needs of the child, have indicated that personality disturbances are often (and significantly often) the consequence. For example, delinquency occurs about twice as often among children from broken homes as it does from unbroken homes [45]. These results were not attributable to other variables, such as socioeconomic status, sex of child, and age level of the child when the home was "broken." Studies of institutionalized children, in whose case rejection of needs or failure to meet needs occurs with significant frequency as compared with situations in which children are in their own homes [46], clearly indicate the tendency for such children to be retarded in general behavioral as well as personality development [47].

A second line of evidence deals more specifically with the effects of the relative degree of acceptance and rejection. A series of studies at the Fels Research Institute in Ohio has shown that accepted children tend to be confident and friendly. In addition they tend to be mentally alert and responsive. In contrast, rejected children tend to be lacking in confidence,

unstable emotionally, and apathetic or rebellious. They are also apt to do poorer in schoolwork and are less alert mentally [48].

Another way of looking at the problem of acceptance-rejection is to examine the effects of *permissiveness-strictness* of the parent upon the child's behavior. Several lines of evidence converge upon this problem, all of them purporting to demonstrate the effects of such behaviors, which seem to imply acceptance or rejection, respectively, of the child. Some workers from Yale University studied the relations between infant care and illnesses in 75 primitive societies. Whiting focused his analysis on the permissiveness-versus-strictness continuum [49]. It was found that societies which were not permissive and did not gratify the dependency needs of their children had a greater frequency of illness in their children and explained them in terms of possession by spirits or loss of soul, thus attempting to deny their own culpability or responsibility for them. Quite the opposite was found to be true in more permissive societies.

Of course it is a far cry from evidence of relationships of this kind to the assertion that acceptance or rejection *causes* the resulting behaviors. Demonstrations of a causal relationship may be gleaned from the studies of animals as well as from studies of child-parent patterns of interaction. Marx studied the relationship between food deprivation and behavior in a group of rats. One group was deprived of food in infancy, while a control group did not suffer such deprivation [50]. It was found that in adult life the experimental rats, in contrast with the control rats, showed significantly increased tendencies to hoard food. They also displayed a significantly faster eating pace following deprivation of food in adult life than did the control rats.

Goodwin Watson conducted a very carefully controlled study on children coming from homes which differed in permissiveness-strictness [51]. Permissiveness and strictness as concepts are comparable to acceptance and rejection, respectively. All of the children came from "good homes," so that variability in socioeconomic status did not enter into differences found between homes which were "permissive" and those which were "strict." The contrast in his study was made between 34 children in elementary school coming from *fairly permissive* parents (he could not find extremely permissive parents in his relatively middle-class group!) and 47 children coming from homes with extremely strict discipline. The behavior of these two groups of

children was evaluated by means of personality tests and by direct observation. He found that those children coming from the strict homes showed no clear personality advantages, whereas, on four of the most reliably rated personality characteristics, those coming from the relatively permissive homes were significantly superior. The permissive group was more independent, more mature in social behavior, more co-operative, and had less inner hostility. Although Watson is cautious in implying a direct causal relationship between the permissiveness-strictness of the home background, on the one hand, and the personality characteristics on the other—for many reasons—his evidence is at least highly suggestive that such a relationship is possible.

A third general line of evidence comes from innumerable clinical studies of children who were found to have been rejected. In evaluating the findings of case studies, we must be careful to note that the usual rigorous controls which thorough research studies require are only rarely possible in this approach and that the bias of the clinical investigator may contaminate the results. Nevertheless, the very massive documentation, from many very different kinds of clinics from different parts of the world with clinicians of different theoretical persuasion, lends credibility to the almost universal finding that rejected children are much more likely to show significant disturbance in their general personality development than accepted children [52, 53]. Rejected children tend to become behavior problems, delinquents, lacking in self-confidence, prone to high anxiety, and unable to function up to the level of their mental capacities. There are exceptions to the general rule, sometimes even remarkable exceptions, and careful study of such cases can lead to more sophisticated hypotheses concerning the specifics of parent-child interactions and their effects. However, exceptions do not necessarily invalidate general findings.

A short presentation of one case of rejection may make some of the mechanisms which produce the aberrant behavior more understandable. The case is presented only for illustrative purposes, and the student who is interested in the problem may refer to the more general literature that has been cited.

A mother brought her nine-year-old boy to one of the writers for clinical evaluation and assistance in guiding him more effectively. She was convinced that her son was somewhat retarded

in mental development because he was unable to function in his academic work in school at the level of his chronological age. This was true despite the fact that he had received fairly intensive individual tutoring by a competent remedial teacher. Prior to this tutoring offered at school, the mother had tried to help her son by coaching him at home, but to no avail. She felt that she could not account for her boy's school difficulties other than in terms of inadequate mentality for the work. Investigation revealed that there were no physical factors that might have interfered with his school learning and no special problems in his school experiences which might have handicapped him. In fact, his developmental history and his school experiences were all favorable.

The mother's explanation of her boy's difficulties seemed plausible, at first glance. Her view that his scholastic problems were caused by inadequate mental capacity for his grade seemed consistent with the facts, and her suggestion that, perhaps, he might profit by placement in a "special" class for slow learners seemed reasonable. She also felt that his moderate personality difficulties, such as negativistic behavior, withdrawal tendencies, and lack of self-confidence might be overcome if he were given schoolwork that did not place an undue burden upon him. The mother's orientation seemed to have much to commend it.

However, clinical study of the youngster by means of formal individual tests of intelligence revealed that he was not inferior in intelligence but on the contrary was remarkably superior! He obtained an intelligence quotient of 145 on one of these tests, for example, indicating that he ranked in intelligence well within the upper 1 percent of children of his age. On the other hand, clinical study also showed that he *felt* inferior, believed he was not liked by his mother or by his peers, and had considerable anxiety. He was functioning more than one year below his age level in reading and arithmetic.

Interviews with the mother and the boy brought out the following facts. At the time the mother was pregnant with her son, she was having considerable marital difficulty with her husband, and divorce seemed imminent. She resented being pregnant, for she felt that this would "trap" her; i.e., she would have the additional burden of being responsible for this child when she already had enough problems of her own. She reported that she had another boy, born three years prior to this one, whom she liked and admired because he "was so much like me in so many ways." She reported that when the younger child was born, she resented him, and she noted, soon afterward, that he seemed to resemble his father in some characteristics. She regarded the older boy as "extremely bright," and her evaluation was confirmed by his extremely superior performance in school. She noted that, by the time the younger boy was three years old, the home situation had improved a great deal, and she began to feel more fondness for her younger child. She tried to "make up" to

him for the neglect she felt he had suffered during his earlier years. Moreover, since she noted that he was inferior, she tried to "encourage" him to do better, often suggesting he take his older brother as a model and try to emulate him. She found herself pointing out his inadequacies and trying to get him to correct them.

On the other hand, the boy reported that his mother had always liked his older brother better than him, that he "knew" how inferior he was to his brother, that he was always being reminded that his behavior and his school functioning were inadequate, and that he often felt alone and unwanted. He also spoke longingly of his father, who was frequently away for long periods because of his business, and of how little time his father had for the family during the periods when he was at home.

These few statements about this case may suggest some of the factors that were involved in this boy's "retarded" development and his inadequate functioning. Intensive clinical study of the family confirmed the impression that this boy had been severely rejected at both the conscious and unconscious levels. Rejection by his mother was subtle as well as direct; he had also been rejected by his father and by his supposedly "superior" brother.

Corrective measures enabled this boy to function at a superior level in his scholastic work. This process took almost two years' time. During this period the mother became able to deal with her own feelings toward her youngster and to resolve her guilt reactions; she also became able to perceive him in a very favorable light. His improvement during therapy helped her, in turn, to accept him more fully. The youngster needed a considerable amount of psychotherapy to work through his own feelings of rejection and inadequacy and to begin to accept his mother and, in turn, be accepted by her. The schoolteachers needed guidance in managing this boy's school program so as to implement his total progress. Unfortunately, it was not possible to work directly with the father, but he gained some vicarious assistance through the work done with the mother and the boy. When psychotherapy was terminated, this youngster's schoolwork was superior, his social adjustment was quite favorable, he was co-operative at school and at home. He was able to function in a relatively independent fashion, and he had acquired a number of "good friends," with whom he was very happy most of the time.

The case illustrates many things, but in one respect it is typical of what has been reported in the psychological literature about the effects of parental rejection: rejection tends to retard development of the personality, it tends to produce less effective utilization of mental abilities than might otherwise be the case, and it adds a considerable burden to the individual's attempts to

adjust to environmental demands. Fortunately, in this case, it was shown that these effects, at least in part, were reversible.

Emotional climate of the home   In recent years considerable research attention has been given to defining, measuring, and evaluating the influence of the emotional climate of the home upon the personality development of the child. As will be seen, some significant degree of convergence in areas to be evaluated and in the significance of the findings has occurred.

Again we must emphasize that the effect of a particular climate in the home depends on factors other than the climate alone. The nature of the child's temperament must be taken into consideration, since the same external conditions of the home would not be presumed to have the same effect upon children with different temperaments. Similarly, the previous experience of the child conditions the way in which he may respond to any given set of conditions defining the climate of his home. Then, too, the consistency in the climate of the home is likely to have important consequences. And, finally, the relation of the home climate to the nature of the culture outside the home, to which the child is exposed, may be of crucial importance, as, for example, when the child is treated indulgently at home but suddenly finds that the world expects him to respond to severe discipline. These illustrations may help to demonstrate how the total complex of factors to which the child is exposed, as well as the nature of the child who is exposed to them, affects the developing personality. The nature of this complex of factors, as well as the degree of its consistency, is significant.

We have already noted the studies by Sears and his co-workers in which types of behavior of the mother, as revealed in interviews and rated by trained workers, were divided into clusters of traits. The most significant clusters that were precipitated by statistical analysis were: permissiveness-strictness; warmth of mother-child relationship; general family adjustment; and responsible child-training. In this study it was found that there were marked differences in the general climate of the home among, for example, middle-class as compared with lower-class homes. This general finding is consistent with many other studies which report the effects of socioeconomic status on home climate and child-parent interactions. (See the book by Symonds for an excellent review of this evidence [54].) It was also learned that the two general characteristics of *permissiveness-strictness* and *warmth* were closely related to personality

The emotional climate of the home.

characteristics of the child in the home. Children coming from *cold, strict* homes tended to be more aggressive, have more feeding problems, and were more persistent bed-wetters than those coming from *warm, permissive* homes. The latter group tended to be more secure and showed far fewer behavior problems. Each of these pairs of conditions was not inevitably associated with the predominant personality characteristics that were obtained. The lack of complete relationship could be due to the unreliabilities of the measuring instruments (as applied to parents and to children), the effect of other concurrent variables, and the constitutional nature of the children—among other possible conditions.

But perhaps we should consider, now, the more general character of the home rather than specific attributes, such as warmth, strictness, and the like. We should like to consider the general attribute of *anxiety*. (See Chapter 4 for a full discussion of this attribute.)

When parents are tense, when they are worried, or when they are in constant conflict with each other, the home atmosphere is likely to be characterized by an emotional turmoil which may be more or less persistent and more or less intense. Anxiety in the parents may take a wide variety of forms and may be manifested in a great variety of ways. (See Chapter 6 for a discussion of the kinds of disorganization in behavior which attend such anxieties.) Such a home climate tends to affect the personality development of children, depending on its intensity and persistence. In a series of studies, MacFarlane was able to show that homes that were high in what we choose to call anxiety (but which she referred to in other terms) tended to have children who were insecure, unco-operative in behavior, quarrelsome, and lacking in intellectual curiosity [55]. Moreover, she and her co-workers were able to show that "high tension" in the home could be measured (as judged by its effects on the behavior of children) very simply by the *number* of unfavorable factors that were present. When only two or fewer unfavorable factors were present, the adverse effects noted were not likely to be present; but when three or more were present, problem behavior, in some form, was very likely to follow. Other studies have reported similar findings [56]. Not only the immediate effects on the personality of the child can be shown to be related to such high-anxiety homes, but the subse-

quent effects on the poor marital adjustment of children coming from such homes is also demonstrable [57].

High-anxiety homes also produce their inordinate share of children with poor sexual identification, that is, an ambiguous sexual self-picture [58]. This can easily be surmised from our theoretical model of sexual identification presented in the preceding section of this chapter. As far back as 1938, Terman was able to offer empirical evidence that children who came from unhappy homes tended to have unhappy marriages themselves [57]. High anxiety in the home makes it difficult to maintain a consistent relationship with either parent in a healthy, nonconflictful relationship. The constant struggle to maintain loyalties to both parents, to avoid antagonisms, to avoid stirring things up still more by showing any preference for either parent, and to find a secure model from which to learn appropriate modes of behavior—all contribute to an ineffectual identity as well as to other personality problems.

Recent evidence suggests that it will be possible to describe adequately the major aspects of the home climate in terms of perhaps four or five major dimensions [26]. Among these, the dimension of *autonomy-control* surely seems to have an important place. This dimension refers to the relative degree of independence which is fostered in the child by virtue of parental attitudes which maximize his growth toward autonomy in his behavior, i.e., independence from external controls and spontaneity derived from effective internal controls. "External control" seems to refer to the degree to which parents impose upon the child an authoritarian regime, i.e., dependence upon strict, rigid, suppressive discipline.

Some years ago, Adorno and others proposed the concept of the authoritarian personality [59]. Evidence derived from many types of observation and measurement indicated that, when parents are severely supressive in their modes of discipline, the members of the family tend to become authoritarian in their orientation toward the world. Children in such families are unable to express their hostile feelings against the parents and tend to repress them. They find it necessary in later life to find models of identification which are strong, sadistic, and prejudiced in their orientation toward others. They give vent to their aggression against minority groups and against passive and less dominant individuals. Moreover, such individuals externalize

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blame for their faults and tend to be rigid in their thinking processes.

Recent evidence from the California Growth Studies [60, 61] indicates that a high degree of control in the home produces a number of unfavorable effects in the children. These effects differ, depending upon whether or not there is consistency in the behaviors of the pair of parents and depending on the age and sex of the child.

Generally speaking, when one parent is hostile, the other tends to be similar [62]. Hence, the effects of this factor are likely to be maximized. Moreover, it appears that aggression in parents tends to have more adverse effects upon girls than upon boys, at least during the early years of life of the child. This latter finding may be an artifact in that most of the studies investigated the behavior of the mothers and not the fathers, so that, when differences in severity of control or in hostility did occur between the parents, it was the mother who was high on these characteristics in the studies cited, and her effect upon the girl may have been more devastating than upon the boy. In such cases, when the father was less severe and hostile, the boy was able to identify with a more democratic father and experience less frustration in his need-satisfaction. Therefore, he may have shown less aggression in his behavior. The major findings, however, should not be lost sight of since, in the main, they confirm the general conclusions of the previous authoritarian studies as well as the recent studies by Sears and his group. The personality characteristics which seem to result from controlling homes include rudeness, irritability, impulsivity, and the like.

Another of the dimensions of home climate upon which recent evidence has converged is that of warmth-coldness [62]. Again, the student should refer to the study by Sears, reported earlier in this chapter. That warmth-coldness is, indeed, a most powerful factor is shown by the consistency with which numerous studies report similar findings. Again, there are differences between children of the two sexes, but these are not as striking as in the case of the dimension of autonomy-control. The studies by Symonds and the recent work of the California Growth Studies show similar trends. Warmth in the home (defined operationally as concern over the children, affection in the relationship, and sensitivity to the needs expressed by the children) tends to beget secure, affectionate, happy, and co-operative behavior in the child. Intellectual curiosity is

heightened. Emotionally stable behavior tends to become characteristic.

We still do not have adequate evidence about at least two major questions related to the problem of the effect of such a climate upon the personality. One of these is the extent to which these effects persist into later childhood and adulthood, although there is some evidence to suggest that the correlations between degree of warmth shown by the parents and the personality characteristics in the child diminish as the child gets older. This decreasing correlation may be due to the diminishing effect of the parental behavior as the child becomes older. Then, too, many other factors outside the home have increasingly greater effect as he gets older. The relatively lower correlations may also be due to the inadequacy of the devices employed to measure the behaviors that are involved. However, as the study by Brody on the interactions of mothers and their infants showed, at least the beginnings of personality development in the child are strongly influenced by the degree of warmth shown by the mother [10], and since the effects during early years of life are also pronounced, as shown by other studies, the dimension of warmth-coldness is a powerful one indeed, no matter what the subsequent variations in personality development may be. It is certainly important to get a good start in life, and warmth in the home seems to be highly important in this regard.

The other question concerns the kinds of behavior which warmth-coldness encompasses. One writer calls this dimension warmth-hostility, for example [64]. Is this dimension related— and, if so, to what degree—to anxiety or to autonomy in the parents? In other words, we are asking whether these dimensions are truly independent aspects of parental behavior or home climate. It will remain the task of future research to clarify the definitions of these, and possibly other, dimensions, to provide increasingly more effective methods for assessing them, and to investigate the nature of th causal connections between them and personality development.

Becker has attempted to integrate the findings from a number of studies, including his own, concerning the primary variables necessary to categorize parent behavior [63]. His analysis leads him to postulate at least three general dimensions: *warmth-hostility, restrictiveness-permissiveness,* and *anxious-emotional involvement versus calm-detachment.* This organization of parental behavior makes use of the repeated findings from various

studies of the interrelationships of various kinds of more specific parental behaviors.

In his review of the research literature, Becker finds support for the importance of warmth and permissiveness in the home in "facilitating the growth of sociable, independent children. . . ." He notes the ". . . debilitating effects of parental hostility." He also finds it possible that the use of threats to the love relationship between parent(s) and child is so powerful that the ". . . development of independence is jeopardized."

An interesting subsidiary finding is that, when the effects of both the mother's and the father's behavior are evaluated in relation to the development of the child, the influence of the father turns out to be at least as great of that of the mother. Since most studies, in the past, have neglected to consider the influence of the father (and many workers have considered it to be negligible), it is apparent that the importance of the father cannot be overlooked.

Although no final answers have been given, the current status of our evidence is that certain child-parent patterns of interaction and the general nature of the emotional climate in the home exert a powerful impact upon personality development of the child. Moreover, the evidence to date, taken as a whole, is not inconsistent with the major premises of the Freudian theoretical position, although there are many questions still to be answered, and some other theoretical view may prevail in the end. We have attempted to represent our current knowledge concerning the factors in child-parent relationships and their consequences in Figure 3.4.

Sibling relationships The case that was discussed in a previous section illustrates some of the possible effects of the relationships between siblings in the family. In this instance, it was suggested that the more favorable attitudes of the mother toward the older brother, as well as the superior accomplishments of this older brother, adversely affected the development of the younger brother's personality and school achievement. All of us have known of instances in which the relationships between siblings presumably influenced the development of each of them. The older good and kind brother who was a mountain of strength to his younger brother may have compensated, in a particular family, for tension between parents and even for neglect by such parents. The "baby" brother in the family who was "spoiled" by all of his older siblings may have become a

CHILD'S CHARACTERISTICS	MODIFYING VARIABLES	MAJOR PARENTAL BEHAVIORS	FREQUENT BEHAVIORAL CONSEQUENCES	
			(+) FROM POSITIVE PATTERN	(−) FROM NEGATIVE PATTERN
PHYSICAL AND TEMPERMENTAL QUALITIES	CRITICAL PHASE	PERMISSIVE (+) VS. STRICT (−) (PERMISSIVE VS. RESTRICTED)	BETTER HEALTH INDEPENDENCE INTELLECTUALLY CURIOUS SOCIALLY MATURE COOPERATIVE LOW INNER HOSTILITY CONFIDENT EMOTIONALLY MATURE SPONTANEOUS	POORER HEALTH DEPENDENCE APATHETIC SOCIALLY IMMATURE REBELLIOUS HIGH INNER HOSTILITY LACKS CONFIDENCE BEHAVIOR PROBLEMS AUTHORITARIAN
AGE	INTENSITY	WARM (+) VS. COLD (−)	EMOTIONALLY SECURE HAPPY MARRIAGE ADJUSTED	EMOTIONALLY INSECURE UNHAPPY MARRIAGE DELINQUENT
SEX	DURATION	LOW ANXIETY (+) VS. HIGH ANXIETY (−) (CALM VS. EMOTIONAL)	SELF-ACCEPTING INTELLECTUALLY CREATIVE FRIENDLY	EXTERNALIZES BLAME INTELLECTUALLY RIGID HOSTILE
PREVIOUS LEARNED REACTIONS				

FIGURE 3.4 *Summary of major behavioral consequences in children resulting from three patterns of parental behaviors and other interacting factors.*

very passive, self-indulgent, and dependent individual. Or the older sister in a family of four younger brothers, who was given the chore of taking care of her younger siblings and who was considered less important in the family simply because she was a girl, may have learned to dislike not only her brothers but most males as well.

The effects siblings have upon each other are likely to have significant repercussions upon personality development, because, aside from the parents, siblings are long-term and relatively consistent agents in the socializing process, and they serve as close-range models of behavior for each other. These effects are difficult to determine precisely. The research problems involved in analyzing the possible effects of various types of sibling relationships take into consideration all of the variant and complex conditions of the home which we have discussed previously. In addition, the relative comparability of different sibling patterns may be a function of the characteristics of the parents. These characteristics may affect the number and age distribution of their children. Moreover, cultural factors affect the different kinds of roles assigned to siblings quite apart from other conditions which exist within the family. For example, older children in Western working-class families have real and important authority in supervising their younger siblings, whereas older children in Western middle-class families have relatively little authority in such relationships [64]. Consequently, the effect of being an older or younger child in a given family tends to vary in relation to these "external factors."

It shall be our purpose in the remaining portion of this section to discuss a few of the many problems concerning the impact of sibling relationships upon personality development. It is interesting that only one psychologist, Alfred Adler, has attempted to propose a relatively comprehensive theoretical analysis of the effects of sibling relationships on personality development, and he emphasized the effects of the *ordinal* position of the child on his personality characteristics.

Quite a good deal is now known concerning the relationships of the factor of being "an only child" to personality development. For one thing, only children are far more likely to occur in families of upper socioeconomic status than in lower-class families. For another, only children are more likely than children who have siblings to show emotional problems in adjustment [65] and are more likely to be overindulged and to suffer

from "Momism" [41]. However, research evidence has not completely demonstrated this to be a specific consequence of being an only child, since emotional and situational characteristics of parents who have only one child may be different from parents with several children. Thus it may be that the combination of special parental characteristics plus the fact of being an only child may produce the personality characteristics found in the youngster.

Now what happens when there is more than one child in the family? Although there is no inevitability about it, research evidence clearly indicates that the birth of the second child tends to have an adverse effect, at least temporarily, upon the first child [66]. This finding is, in some respects, contrary to the commonly held belief (less common now than it was before some of the research findings became widely known) that the older child is bound to love his new sibling, greet him with excitement and tenderness, and constructively assimilate him into the household. The adverse effects upon the older child constitute a kind of *syndrome,* that is, a more or less characteristic cluster of reactions. He tends to regress in his behavior (see Chapter 4 for a discussion of this phenomenon), he becomes jealous and hostile, and his relationship with his parents becomes more unstable. These effects may be minimized by a number of conditions, such as the age spread between the siblings [67] (an age difference of four or more years produces quite different reactions than a smaller age spread), the total number of children in the family, and, perhaps most important of all, the emotional security of the older child [68, 69]. The adverse effect upon the older child may occur with greater likelihood when other conditions are unfavorable. When other conditions are favorable, the adverse effects are likely to be only temporary and may even assist in emotional maturation if the older child, by learning that he can express negative feelings, thus gains more security in dealing with frustration.

It is also clear that the *ordinal* position of the child in the family influences his personality development. Present evidence points to a few important generalizations about ordinal position, but the student should be reminded that these conclusions need further research appraisal. There is a tendency for the youngest child in the family to be more ambitious, more competitive, and more outgoing than his older siblings [67]. One possible effect

of having older siblings, who appear to be in more favorable positions by virtue of their greater maturity, is that they act as models against which one must compete. Aspiration levels may be raised by the constant presence of these visible older competitors. On the other hand, the oldest child is more likely than his siblings to be withdrawn, perhaps shy, and to show more variability in mood [67]. The position of middle children tends to be intermediate between these two extremes.

We should emphasize that the range in ages of the siblings as well as the distribution of the sexes may significantly affect the influence of ordinal position. It is also evident that the size of the family group has important bearings upon the personality development of the several members of the family. Although it is hard to pin down specific cause-and-effect relationships between each of the several factors in sibling relationships and personality attributes, the cumulative evidence, both research and clinical, has clearly indicated that these relationships are relevant and substantial.

Consistency of parental attitudes We have noted that the behavior of parents changes as they get older. As they gain more experience in dealing with each other and their children, as they react to favorable and traumatic events in their lives, and as they acquire new values in the very process of living and adapting, they become at least a little different. After all, *parents are people,* and people do change even though the "core" of personality may remain relatively stable. One of the puzzling questions we need to consider is how relative consistency or inconsistency over time in parental attitudes toward their children affects the personality development of their children. To provide answers to the implications of this broad question probably requires long-term longitudinal studies of both parents and their children, and as yet we have no definitive evidence on this problem. This lack of information is due to many factors, such as the great expense of conducting such studies, the operational and methodological difficulties in such studies, and the need for development of appropriate measuring instruments which are useful over a wide span of ages. Some of the longitudinal research projects we have referred to in preceding sections may soon produce evidence on some phases of this broad problem. However, in the past, investigators have assumed that parental attitudes have remained stable over time.

Pertinent to this problem is the work that has been done on

consistency of traits among adults. The general finding that may be summarized is that adult personality tends to remain reasonably consistent but that, with increasing age, predictable trends in certain directions occur. The first half of this conclusion may be better understood if it is stated in some numerical fashion, as follows: there is a tendency for most personality characteristics of adults to show self-correlations between about .40 and .60 over a relatively short period of time (say, over a five-year span). Such a finding indicates that the individual tends to rate or score about the same, within reasonably wide limits, on specific personality characteristics. Nevertheless, such correlations are far from perfect, and considerable fluctuation may occur for any given individual. The second half of the conclusion may be made more explicit by indicating that, with increasing age, there is a tendency toward more rigid moral attitudes, more conservative ethical and political thinking, and more rigid behavior [70].

There is also evidence that, as adults get older, particularly after thirty–forty years of age, they tend to show diminished interest and participation in athletic activities, they become more anxious, and they change in their self-concepts in that they become more uncertain about their values and have more self-deprecatory attitudes [70, 71]. Some of these changes may be attributable, in large part, to physiological changes associated with aging, while others may be attributable to increasing concern with physical limitation due to illness, the process of physical aging, and death.

Two recent studies concerned with a longitudinal approach to personality attributes are of special interest. The first, by Kagan, studied the stability of passive and dependent behavior [72]. From the latency period to the adult years, these personality attributes remain fairly stable in women, but they are far from stable in men. Thus, there is a difference between the sexes in the relative stability of these traits, possibly associated with cultural factors which enable women to retain more stable passive and dependent roles than men.

Kelly has reported on the follow-up results obtained from a group of 300 engaged couples over a time span of approximately 18 years [73]. Because of various factors, a certain number of these individuals were unable to participate in the follow-up testing. Nevertheless, a large number of cases remained, upon whom original and retest results were obtained

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(215 males and 231 females). Kelly's findings represent unique types of data on the problem of consistency of the adult personality. But first, we must note that the subjects were a highly select group of individuals, not representative of the general population. They were superior in intelligence, superior in education (75 percent had at least one year of college), mostly between 21 and 30 years of age at the time of initial testing, and were living in New England when the study began. The retest correlations for personal values (as measured by the Allport-Vernon Scale) ranged from about .30 to about .60. The attitudes of these individuals (as measured by Remmers' Attitude Scales) were far less stable, the retest correlations ranging from about .06 to about .35. In fact, the retest on "attitudes toward marriage" indicated that there was no consistency for these individuals on this factor over the approximately 20-year span. On the other hand, vocational interest (as measured by the Strong Interest Test) remained the most stable of any of the attributes measured; the median retest correlation over the several categories of vocational interest was .62 for men and .57 for women. The retest correlations for personality attributes as measured by the Bernreuter Personality Test were almost as high as for the Interest Scales; .61 for self-confidence and about .46 for sociability.

The highest consistencies were found in values and vocational interests, and the lowest were found in attitudes. Of course, the absence of very high correlations may be due, in part, to the fact that none of the measures used has perfect reliability, but the fact that the obtained correlations were lower than the reliabilities of the instruments indicates the absence of absolute consistency in these attributes of the adults. Kelly interprets his data to show that "absolute changes in personality scores tended to be small but similar in direction and magnitude for men and women." He also adds, "But we also found evidence for considerable change in all variables measured," and "Our findings indicate that *significant changes* [our italics] in the human personality may continue to occur during the years of adulthood."

Taking all of the known evidence into consideration, we may conclude that some parents show very considerable change in personality, although most show only moderate change. Changes in attitudes toward others and toward the self are likely to be far from stable, and these attitudes tend to become

more conservative, rigid, puritanical, and punitive as the adult gets older.

Not only may the same child receive different treatment from his parents as he and they get older, but children coming into the family at different times in the lives of the parents may receive quite different treatment from the "same" parents. Children born when the parents are relatively young may be treated with greater tolerance and beneficence. Those children who happen to have parents who are highly inconsistent in personality and attitudes over time may be subjected, therefore, to the traumatic impact which such inconsistency imposes.

We stated at the beginning of this section that evidence on the consistency of parental attitudes was far from adequate. Our survey of the literature reveals very little that is directly pertinent to the problem of changing attitudes of parents toward their children. We have even less evidence on the possible effects such inconsistencies may have on the specific personality characteristics of the children. We can only surmise that such inconsistencies have an important bearing on the developing personality. There is considerable suggestive evidence from clinical psychology, especially from case studies in which psychotherapy of the parents was associated with changes in parental attitudes. Such changes seem to have highly significant effects on the personality development of the children involved. This appears to be especially the case when parents move from more negative to more positive attitudes toward their children's behavior and toward more accepting relationships with them. Such clinical evidence is consistent with the empirical studies on the effects of rejection and acceptance on the development of the personality characteristics of the child.

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FOUR CONFLICT, ANXIETY, DEFENSE, AND COPING

Introduction

We shall now turn our attention to some of the important ways in which an individual deals with external frustrations and internal sources of conflict. Even under the best of circumstances, the development of one's personality is never smooth and regular. It follows an irregular path as the individual moves from infancy to adulthood, sometimes moving rapidly ahead and at other times halting in its development or even moving backwards.

The sources of this irregularity in development lie both within the organism and in the conditions to which it is exposed. In the

present chapter, we shall learn how the individual, whatever his resources may be, copes with the problems of living and adapting to varied situations. Such problems often lead to conflict within the individual, and in turn anxiety may be aroused. As we shall see, the ways in which an individual learns to react to conflict and anxiety are of critical importance in his over-all development.

In the following sections we shall discuss the nature of conflict, and we shall learn how conflict leads to various kinds of anxiety reactions. Then we shall discuss the kinds of defenses which the individual learns to employ in dealing with conflicts and anxiety. In short, we shall learn how the individual contends with the stresses and strains of living.

Conceptualization of Conflict

The term *conflict* has been defined in a number of ways, but we shall consider its theoretical meaning as first developed by Kurt Lewin and which has received wide acceptance [1].

We should first distinguish between *conflict* and *frustration*. Let us assume that the individual wishes to reach some goal. If, now, some obstacle is placed in the path toward this goal, the satisfaction of the wish is frustrated or blocked. Frustration may be thought of as some thwarting circumstance which impedes progress toward a goal. Figure 4.1 illustrates schematically two kinds of thwarting circumstances: one in which the path toward a goal is blocked by a barrier and another in which the goal cannot be fulfilled because the situation lacks the means with which to achieve the goal. In the first instance, for example, a person is frustrated when motivated to eat, but something in the situation prevents him from getting to the food. In the second instance, he is motivated to eat, but there is no food available to him. Psychologists have studied reactions to frustration extensively. They have shown that at times frustrations lead to anger and aggression, produce an increment in the motive (the person "struggles harder to reach his goal"), lead to withdrawal from the situation or to other "defensive" reactions, but sometimes lead to problem-solving responses that circumvent the frustrating agent.

By contrast, conflict refers to certain *internal* conditions which block effective goal-directed behavior. At any given
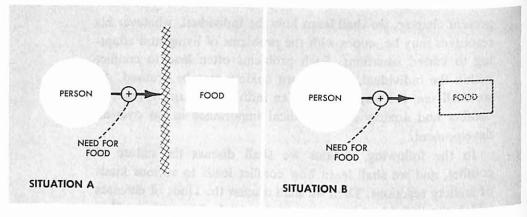
FIGURE 4.1 *Two types of frustrating situations. Situation (A): need for food is frustrated by an obstacle. Situation (B): need for food is frustrated by absence of food.*

moment, each person is being "prodded" by many motives. The term "motive," as we use it here, refers to the condition of the organism which influences the direction, intensity, and/or persistence of a behavioral sequence. The essence of a conflict condition, then, involves the *simultaneous arousal of two or more motives which are, in some degree, competing with each other.*

TYPES OF CONFLICT Lewin suggested that there are three types of basic conflict situations. In the first, the individual is simultaneously motivated to approach and to avoid the same
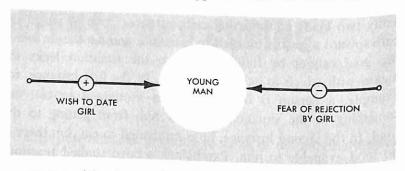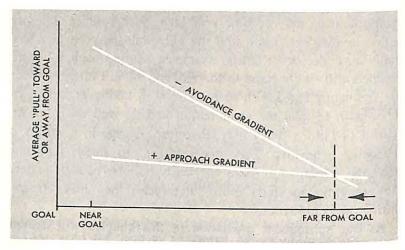
FIGURE 4.2 *Approach-avoidance conflict. Young man wishes to date girl (+), but is fearful of rejection (−).*

goal. This is called the *approach-avoidance* conflict. (See Figure 4.2.) Examples of such conflicts in human affairs are legion. A young man wishes to call a girl for a date, but he is fearful of rejection. Until he can resolve this dilemma, he is in a state of conflict. If the approach and avoidance motives are equally

strong, tension may become very high. Such conflict states are called *ambivalent states,* and the individual may be unable to make any decision. Other examples of approach-avoidance conflicts will surely come to the reader's mind. College students are frequently faced with such conflicts in taking examinations. They wish to take the examination and do well on it but are fearful of failure. They may, therefore, engage in a variety of defensive behaviors. They may "forget" to study; they may leave the examination room very early because of high anxiety; they may try to study more intensively; they may "freeze" during the examination.

As our subsequent discussion in this chapter will demonstrate, approach-avoidance conflicts are both extremely important and frequent in human adjustment and personality development. There are many examples of this type of conflict situation. Such conflicts are likely to lead to disorganized and more primitive response patterns of behavior. Clinical studies and research have shown that in many approach-avoidance conflict situations the individual is "drawn" toward the goal by the approach motivation, but, as he gets nearer to it, the strength of the avoidance motivation becomes rapidly greater. The phenomenon is like that of the young man who finds that a certain girl seems attractive and exciting to him, so he hurriedly arranges a date, "forgetting" meanwhile that she has many undesirable characteristics. It is like the problem of the mountain-climber who "remembers" how much fun it is to climb a mountain, but, until he reaches the site of the mountain climb or until he is well up on its slopes, he "forgets" that there are many dangers. In such instances, the sudden emergence of anxiety as the "goal" is approached may lead to disorganized or defensive behavior.

These illustrations also involve the principle of the *approach-avoidance gradient.* In the first illustration, for example, the young man may remember the girl's negative qualities more readily as the time for his date approaches. Even closer to the date, he might "forget" his appointment entirely. This is an example of the psychological effects produced by different *slopes* of approach and avoidance gradients. They were first found in studies of animal behavior [2]. Measuring the amount of effort expended by the animals in reaching a positive goal or in trying to get away from a negative, unpleasant goal results in observations like those in Figure 4.3. This means that the positive,

FIGURE 4.3 *Illustration of approach and avoidance gradients based on amount of effort expended by animals in attempting to approach or move away from a goal. Note greater steepness of avoidance gradient as compared to approach gradient. Arrows indicate points at which animals would run toward or away from goal. Adapted from N. E. Miller. Experimental studies in conflict. In J. McV. Hunt (Ed.), Personality and the Behavior Disorders. New York: The Ronald Press, 1944, p. 434. Copyright 1944 The Ronald Press Company.*

approach tendencies are exhibited over a larger area than the negative, avoidant tendencies. The avoidance tendencies have steeper slopes and are more concentrated near the goal.

The second and third types of conflict situations have much in common. In both there are *two goals,* and the response tendencies are in a *similar direction.* One of these types of conflicts is called the *approach-approach* conflict. The other is termed the *avoidance-avoidance* conflict.

In the approach-approach conflict situation, the individual is faced with two positive, approach alternatives. (See Figure 4.4.) His problem now is to decide between them. Should he date Sally or Mary, both of whom he finds very attractive? Should he go to a large or a small college, both of which have advantages for him? Should he go to a movie or attend the basketball game? In situations such as these there may be some vacillation in choosing a course of action, but a choice will probably be made after a period of time. However, if the goals are about equally attractive or if there is strong personal involvement in the choice, the decision may become much more difficult [3]. In such instances, there may be long delay or even
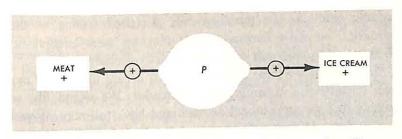
FIGURE 4.4 *The approach-approach conflict situation. The person P is faced with two approach alternatives.*

inability in making a choice, or there may be alternation in the choices, if this is possible. Some form of compromise solution may also be sought.

When we have to face two unpleasant goals that we wish to avoid, so that in either we are confronted with an avoidance-avoidance type of conflict, the appropriate behavior would involve avoidance or withdrawal. Many situations of this type arise in the course of daily living. (See Figure 4.5.) For
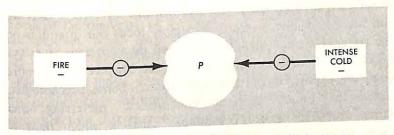
FIGURE 4.5 *The avoidance-avoidance conflict situation. The person P is faced with two avoidance alternatives.*

example, we may be offered a choice of two kinds of food, but both are disliked. Or we may have to choose between two courses to fulfill a college requirement, but both are uninteresting. In such instances, we might try to avoid the entire situation or do nothing. If forced to make a choice, we might vacillate for a long time.

LEVELS OF CONFLICT There is another way in which conflicts may vary. This relates to the degree to which the individual is aware of the presence of various motives. It is a commonplace observation that one may "suddenly" feel very tired, or develop a headache, when faced with an unpleasant obligation. Sometimes the presence of conflict leads to these reactions. It may become known to us only after we have already developed the

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somatic reactions. In puzzling over the tired feeling or the headache, we may become aware that we were ambivalent about the obligation that we did not wish to discharge.

It is difficult for some of us to grasp or accept the idea of our own unconscious determinants of behavior. We would like to believe that we are rational animals and have full control over our actions. However, it remained for Freud to discover the great significance of unconscious motives and unconscious conflicts in everyday life as well as in neurotic problems [4]. In the next chapter we shall discuss the theoretical significance of these discoveries. At this point we merely wish to clarify the meaning of the concept of unconsciousness.

Mental activity goes on at various levels. At one level we are fully aware of what we are thinking, striving for, and feeling. On another level there is no awareness of some of these activities. For convenience, the whole range of awareness may be subdivided into three major categories: the *unconscious level* (of which we have no awareness but of which we can become aware under certain conditions); the *preconscious level* (of which we can become readily aware if we simply focus our attention on the relevant mental phenomenon); and the *conscious level* (of which we are currently fully aware). (See Chapter 5 for a more complete exposition of these constructs.) Some psychologists dislike the use of the term "unconscious," preferring other terms which are more "operational," that is, which refer to more overt and explicit behavior. For others, the concept implies a dichotomy between consciousness and unconsciousness which they find unacceptable. However, most psychologists assume that there is a continuum on which mental events may be ranked with respect to the person's awareness of them.

As we shall see later, there are many types of data which are consistent with the hypothesis that mental activities occur at an unconscious level. Our present purpose, however, is to illustrate how unconscious conflicts may influence behavior. The following three examples of unconscious conflict indicate that we sometimes behave with only partial or with no awareness of the nature of our conflicting motives. At the same time, in each of these illustrations, the subject was aware of some of his motives, or was aware of them in some distorted manner.

One of the authors, who is a psychotherapist (a person who seeks to assist people in resolving debilitating emotional conflicts), was working with a college student. This student was very

uncomfortable in some of his classes, felt anxious in them, and could not perform satisfactorily. As his psychotherapy progressed, he gradually became aware that his difficulties occurred in those classes in which he felt attracted to his male instructors. He came 20 minutes late for the next session following the one in which he had talked about his "discovery" of these feelings. He "explained" that, in driving to the psychotherapist's office, he had "accidentally" taken a wrong turn, and before he knew it he had driven to the opposite side of town. During this session he made no reference to his discussion of the previous meeting. Instead, he spent his time talking about the subject matter of the courses in which he was having difficulty. At his next appointment, the psychotherapist asked him why he had discontinued discussing his feelings about the instructors. He disclaimed having discussed this problem, but, before the session was over, he got up and prepared to leave, although there were some 15 minutes left in the session. He was embarrassed and stated that he had looked at his watch and had thought that his time had run out. It was only after a number of additional sessions that he became aware of his conflict over his undiscovered homosexual impulses. He became aware that he was attracted to these men and was, at the same time, anxious about the anticipated disapproval of the therapist, of his family, and of himself for having such motives. Much more therapy was needed before he was able to resolve his conflicts and work effectively.

Our second illustration is taken from a study using hypnosis [5]. In this study, neurotic patients were first hypnotized and were then told that chocolate candy was very "bad" for them. They were instructed not to remember that they had been told this when they were awakened from their trance states. In the posthypnotic condition none of the patients remembered what they had been told under hypnosis. Each was then offered some chocolate candy. Each reacted differently to this situation, but all showed the effect of the hypnotically induced but "forgotten" motive. One patient became blind temporarily and did not see the candy when it was offered. Another patient ate the candy but developed nausea and intestinal pain. She finally regurgitated the candy. It would be interesting, but not relevant to our main point, to discuss the various methods used by different patients to attempt to resolve their conflicts. Our point at this time, however, is to demonstrate how conflicts of which the person is entirely unaware may dramatically affect behavior.

For our third illustration we shall refer to some research work by a group of investigators studying the influence of the "achievement motive" (the motive to perform well in some

task) upon behavior. In one study these psychologists were interested in studying the relative effectiveness of consciously experienced motivation to achieve as compared with the effectiveness of this motive when it was not consciously perceived [6]. They measured the former by asking the subjects to rate themselves (using a questionnaire) on the strength of their motivation to achieve. They rated the latter by inferring the strength of this (hidden) motivation from stories about people in picture situations (see Chapter 8 for a discussion of such methods) which these subjects told. This indirect measure of achievement motivation correlated significantly with various criteria of superior performance under laboratory conditions, while the conscious, direct measure of this motivation did not so correlate. In other words, performance was influenced by motivations of which the subjects had little or inaccurate awareness.

Findings such as these have some further implications. One is that conflicts occurring within the individual may produce a temporary state of disharmony. The second is that conflicts that one is unaware of contribute to the development of a chronic state of anxiety and may lead to more serious disorganization of behavior and personality [7]. If we are unaware of what it is that is bothering us, or about which we are conflicted, we are, to that extent, less able to make appropriate decisions or to function efficiently [8]. Conscious conflicts, on the other hand, may often be resolved more readily, and such resolutions may even be productive of more healthy development of the personality. Unconscious conflicts tend to have a spiral effect in that they produce behavior which makes it ever more difficult for the individual to become aware of his internal difficulties and to resolve his problem. Karen Horney offers the example of the individual who has learned to be overly submissive and obliging toward others because he is very fearful (for reasons of which he is unaware) of criticism and rejection [9]. He becomes unable to express himself spontaneously and assertively and becomes, in turn, ever more fearful and bitter. But to avoid further discomfort, he all the while persists in being sweet and overly submissive to others, becoming ever more fearful and hostile inside. In this way the conflict tends to be increased, since there is no awareness of its origins, and effective resolution or adaptation becomes increasingly more difficult. In severe cases of unconscious conflict, personality disorganization may become persistent. (See Chapter 6.)

The Nature of Anxiety

In the previous section we introduced the term "anxiety." Now we shall attempt to define this term and differentiate it from other concepts.

ANXIETY AND FEAR The terms *fear* and *anxiety* have usually been used interchangeably in popular literature and thought. However, they are distinguishable. In a technical sense fear refers to an apprehensive reaction to some external danger that is known to the individual. For example, the young child is fearful of falling off his bicycle, the teen-ager is fearful of getting into a fight with a much stronger boy, and the adult is fearful of swimming across a wide lake when he knows his own limited swimming ability. In situations such as these the individual is able to assess rather accurately the source and degree of danger which confronts him and, barring unforseen circumstances, is able to make appropriate adaptive responses to the situation. In fear situations, the source of the danger is external to the person, is known to him, and can be assessed fairly accurately if previous experience has been adequate to teach something of its characteristics and its possible consequences. A response may be made to approach the situation, in an attempt to cope with it and overcome the feared situation, or the response may be avoidance or an attempt to find some compromise solution if the problem cannot be dealt with directly. The fear can then be reduced in a relatively efficient manner.

In contrast, anxiety refers to an internal state, of which the individual has only partial awareness. Its source is in some conflict which is not fully known. The direct expression of needs or the solution of the conflict is blocked because the individual is unaware of the source of the danger and because the direct expression of the conflicting drives would tend to suffuse and overwhelm the normal adaptive functions of the person. (See Chapter 5 for a discussion of the concept of ego.) Because he does not "know" what is troubling him, the individual is unable to make an effective response which would resolve the conflict. As a result, he makes some ineffective response which is *not* entirely appropriate, and the original conflict is reinforced. Anxiety reactions are thus likely to be increased.

Persistent anxiety may lead to an anxiety state, in which the individual suffers from diffuse and persistent apprehension but cannot ascribe any known cause to it. Such states are known as *anxiety neuroses*. (See Chapter 6 for a discussion of neuroses.) A phobia (a persistent, specific, and irrational anxiety) is another form which anxiety may take. There are many types of phobias. The following is one example of a phobic reaction. A man becomes highly anxious when he enters an elevator. He "knows" that modern elevators are well engineered and have many safety features. He "knows" his anxiety is unreasonable, but he dreads entering an elevator and, if forced to do so, sweats profusely, shows increased heart rate, begins to tremble, and dashes out at the first opportunity. In this kind of phobia the man "knows" that he fears elevators, but he does "not know" why he is anxious about them. The source of his anxiety is just as well hidden from him as from the person with more general, less specific anxiety. In a phobic reaction the individual "attaches" his anxiety to some external object in an attempt to gain some degree of control over it. Clinical study has often revealed that phobias of this kind have developed on the basis of previous experiences in which the person was rejected or was left alone and helpless. Finally, small, closed spaces trigger off the current phobic reaction. The true source of any phobia lies in past events in which important needs were thwarted and the individual's entire security system was somehow endangered. Phobias, which on the surface may resemble fears, are actually anxiety reactions in which the individual is unaware of the nature of his conflict. Figure 4.6 illustrates the relations of fear and anxiety states to their origins.

Many theories have been offered to explain the source and the nature of the anxiety. Some theorists regard anxiety as a specific response to specific conditions [10]; anxiety is thus roughly equated with the fear response. For others, anxiety is conceived as a *drive* (in this respect like any other biological drive), and it is defined as a "non-directive energizing function assigned to D in Hullian theory" [11]. In terms of this theory, in simple situations (those uncomplicated by other drives and motives), persons with high anxiety would learn more rapidly than those with low anxiety. There is experimental evidence that this is the case [12]. The effect of the anxiety drive varies, however, depending upon other response tendencies of the organism, other competing drives, and so on.
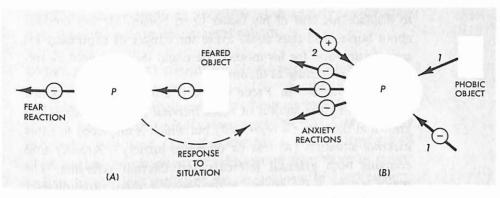
FIGURE 4.6 *Origins and responses to fear and anxiety. In (A) the feared object is "known" and the person P circumvents the difficulty. In (B) the source of anxiety (needs 1 and 2, which conflict) are "not known" and P experiences anxiety reactions and displaces his anxiety to some "known" but irrelevant object (the phobic object).*

Freud proposed an elaborate theory to explain the source and manifestations of anxiety [13], but he was never satisfied with his theory and kept reformulating it on the basis of new observations and more refined analyses. His last formulation conceived of anxiety as a "danger signal" from within to warn the individual that the expression of certain "instincts" under certain circumstances would be dangerous. In other words, anxiety arises when an individual tries to avoid dangers which would occur if he behaved in a certain way. However, he is not aware, or is not fully aware, of the source of the danger that lies within him. What he does become aware of is the danger that the external situation provides. Thus, in this theory, the individual *fears* some external event (objective anxiety) due to apprehension over some internal motives whose expression in that situation would prove dangerous.

This formulation was illustrated by Freud in connection with his analysis of the case of a five-year-old boy, Hans [14]. This boy was afraid to go into the street (the fear) because of his phobia about horses (the symptom). But the source of the anxiety was really unknown to this boy. It turned out that Hans felt strongly attracted sexually to his mother, but he was very much afraid of his father, who he feared would destroy him for having such impulses. He also liked his father when this did not bring him into conflict (competition) with him for his mother's love. Thus, he feared retaliation by his father for both his love of his mother and his hostile feelings toward his father. Hans learned

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to displace his fear of his father upon horses. He felt anxious about horses and thus could avoid the danger of expressing his sexual attraction for his mother. He could thereby avoid awareness of the real cause of his anxiety.

To summarize, in Freud's theory anxiety is seen as the perception by the subject of some *internal danger* which is unknown at the time (is *repressed*) but which is displaced to some *external* situation (as fear or objective anxiety). Anxiety thus contains both external referents and internal referents. The major source of the anxiety is the classic oedipal situation (see Chapter 5 for a discussion of this problem), which reinforces the original anxiety level of the individual.

CHRONIC AND REACTIVE ANXIETY Further study of anxiety enables us to distinguish between its *chronic* and *reactive* manifestations. Chronic anxiety refers to a more or less persisting state of anxiety with which the personality is suffused. We often refer to an individual as "being in a constant state of anxiety." This type of anxiety is characteristic of some types of neuroses. What we mean by this notion is that a certain high level of anxiety is constantly present, and no new traumatic event is necessary to instigate it. This kind of persistent anxiety, termed *anxiety state,* can be measured, and can be shown to have significant correlates in behavior [15]. Chronic anxiety may vary in level of intensity and when high may be indicative of a persistent psychoneurosis [16], whereas, when it is relatively low, it may simply represent a generally heightened state of drive-arousal conducive to more rapid conditioning and more effective learning of many simple types of tasks.

On the other hand, reactive anxiety (also called transitory anxiety, by some) is the anxiety level produced by transient events in the life of the individual [15]. In terms of our discussion in the preceding sections, reactive anxiety would represent some combination of a fear response and an associated anxiety response which act together to produce a temporary increase in the anxiety level. This type of anxiety is also measurable and is experimentally different from chronic anxiety [15].

We do not yet know many of the correlates of these two types of anxiety manifestations, although the preponderance of recent research seems to indicate that (1) a high level of chronic anxiety is found in many, but not all, types of psychoneuroses

and (2) a strong tendency toward reactive anxiety is characteristic of emotionally immature personalities.

OVERT AND COVERT ANXIETY Hutt has attempted to distinguish *overt* from *covert* anxiety [16]. A number of other workers, deriving their insights from somewhat different sources, have reached similar viewpoints [16, 17]. Overt anxiety is a behavioral *trait* (i.e., characteristic). The parameters of overt anxiety are more easy to distinguish than those of covert anxiety by the very nature of the phenomena. In overt anxiety, the behavioral reactions are visible to the naked eye, so to speak. The individual feels anxious, may have motor tremors, may flush easily, feel his heart pounding, and be aware of increased tension and increased sweating. The behavior in overt anxiety may be quite similar to that of fear, but the individual "doesn't know why" he behaves like that. Overt anxiety may typically occur in some specific life-situations for the individual. Some people are very anxious on tests, while others are very anxious in benign social situations. Mandler and Sarason have developed the Test Anxiety Questionnaire (TAQ), which presumably measures the characteristic anxiety level an individual shows in academic test situations [18]. On the other hand, overt anxiety may be more generalized and be elicited over a wide variety of life-situations or even be "ever present." Thus, Janet Taylor has developed her Manifest Anxiety Scale (MAS), which attempts to measure this kind of phenomenon [19]. Although measures such as these have been quite useful in a wide variety of research studies, they also present a great many problems. The correlation of test scores of manifest, or overt anxiety, with each other tend to be positive but low (usually of the order of $+.20$ to $+.30$) and their relations with other behavioral phenomena inconstant over different types of populations. In other words, the scales, as presently derived, tend to measure relatively specific rather than generalized features of the personality, except perhaps at the extremes on these phenomena.

Covert anxiety, which is construed as an intervening variable, refers to anxiety which is not directly observable but must be inferred from behavior. In other words, the consequences in behavior are attributed to this hypothesized factor. We should note that scientists have frequently conceptualized some factor which is not directly observable. Electricity cannot be observed,

but its presence can be inferred from its effects. Similarly, atmospheric pressure can only be inferred and not observed directly. The presence of covert anxiety may similarly be inferred from its effects. An individual may be unaware that he is anxious yet may, for example, develop migraine headaches (induced, in some instances, by increased blood pressure in the frontal area of the head because of increased anxiety). Many forms of psychosomatic disturbances, in which there is no organic or structural defect but in which there is a malfunction of an organ or organ system, are believed to be the result of high levels of covert anxiety [20]. Peptic ulcers may be caused by this condition; so may essential hypertension, spastic stomach, colitis, and even cardiac disturbances. The inference that covert anxiety is a factor in the development of such conditions (in many cases) is based on the fact that psychotherapy which acts to reduce the anxiety assists in reducing or eliminating the psychosomatic disturbances [21]. Another line of suggestive evidence is furnished in the dreams and nightmares of such individuals, which reveal how anxious they may be without "knowing" it. Still another line of evidence comes from projective tests, as in the research cited above on the achievement motive.

Covert anxiety may also take a *symbolic* form. In such cases there may be little overt anxiety and there may be no gross psychosomatic disturbance, in the usual sense, but the individual may show a dysfunction which has a specific symbolic meaning for him. Such symptoms may be attributable to anxiety. Cases have been reported in which the individual shows psychogenic blindness, or peculiarities of visual function such as tunnel vision (he cannot see outside the confines of a limited "tunnel-like" area), or psychogenic deafness, or psychogenic paralysis of the fingers [22]. In such cases there is no anatomical or physiological defect, but an inhibition of function has occurred. Moreover, the dysfunction does not follow the usual physiological pattern that is present when, for example, a nerve is paralyzed but rather follows the individual's specific conception of the supposed nature of his organic disability. Many years ago, *glove anesthesia* was described, a phenomenon in which the anesthesia corresponded to the area of the hand that might be covered by a glove but which made no sense in terms of the biological nature of the nerve distribution in the hand and in which no organic defect was present [23]. Such symptoms are

found most frequently in cases of *hysteria*. In all of these instances, the symptoms of the individual *symbolize some underlying conflict.*

Not only does the dysfunction correspond with the individual's unconscious conflict, but it clears up when the underlying conflict and anxiety have been reduced or resolved. Moreover, the presence of symbolic anxiety can be dramatically demonstrated when the clinician working with this kind of patient exposes the conflict by making a relevant interpretation and "triggers off" the anxiety. At this point the patient may become highly agitated and overtly anxious, as though the anxiety had been suddenly released.

The distinctions between fear and anxiety, chronic and reactive anxiety, and overt and covert anxiety may now be applied to a brief review of some behavioral phenomena, as in learning, in regression, and in psychological defenses, which are the next subjects for discussion.

ANXIETY AND LEARNING The research literature is replete with studies suggesting that subjects who are high on anxiety tend to perform well on simple learning tasks. The reverse is not so frequently found, namely, that subjects who are low on anxiety do not perform well. Moreover, the findings on the learning of complex tasks, such as abstract reasoning, problem-solving, and the like, are far from consistent with the theory that high anxiety serves to increase general drive level and so tends to facilitate all learning [24]. This theory has received a critical review by Spence, in which a more careful formulation of anxiety as constituting a high state of drive is made and the nature of the critical factors involved in such studies is analyzed [11]. As Spence says: ". . . D [or Drive, in his terms] is a function of the strength of the emotional response made by the organism to *noxious stimulation* . . ." [11, p. 133; italics ours]. The Manifest Anxiety Scale was developed by Janet Taylor in order to differentiate subjects in terms of "the degree to which they admitted to possessing overt or manifest symptoms of emotionality. . . ." Spence points out that his theory is concerned with the effects of aversive, stressful stimulation which may arouse activity "under the control of the autonomic nervous system. . . ." In relation to the learning of complex tasks, the problems involving the effects of anxiety are far more complex than the relatively simple theory introduced to account

for learning of simple tasks or in conditioning studies. As he says: ". . . in order to derive implications concerning the effects of drive variation in any type of complex learning task, it is necessary to have, in addition to the drive theory, a further theoretical network concerning the variables and their interactions that are involved in the particular learning activity."

We have tried to present the complexity of the problem of conceptualizing, defining, and measuring anxiety. We have noted that various measures of anxiety, especially those of the paper-and-pencil questionnaire type, have only approximate validity and do not correlate very highly with each other. It is especially true that covert and overt anxiety tend to show little or no relationship with each other. Hence, if we are to understand the nature of the relationships of anxiety to learning, we have to specify not only the types of anxiety and how they are measured but the types of learning and how they are measured.

Moreover, anxiety is only one of many possible contributors to performance, that is, it is responsible for only a small portion of the variance in behavior. This really means that other motivational variables, the capacities of the individual, previous learning experience, and the nature of the learning situation contribute their share to learning and performance.

One of the interesting findings by Sarason and his co-workers is that individuals who are high on specific test anxiety (a special form of overt anxiety) tend to do better than average on test situations for which they are able to prepare themselves. They tend to do worse, however, on examinations for which no immediate preparation is possible [25, 26, 27]. In such instances we can speculate that relatively focused overt anxiety (focused, that is, on the immediately relevant task) tends to increase general drive level, alerts the individual to events or facts which he must master (therefore produces better input of information), and so improves his performance. Why, however, does it not improve performance on tests where specific preparation does not help? We might speculate, again, that such drives are not highly pertinent in complex learning tasks.

These speculations are not inconsistent with some of Freud's earlier formulations which proposed that moderate degrees of anxiety not only did not "flood the ego" (i.e., did not overwhelm the individual) but acted as "warning signals" which alerted the individual so that he could perform the tasks more efficiently or avoid apparent dangers [13]. In short, relatively

moderate amounts of overt anxiety may facilitate simple learning since this may assist in marshaling attention, increasing drive state, and promoting appropriately vigilant behavior. On the other hand, relatively extreme amounts of overt anxiety (and most laboratory studies do not even approach this condition[1]) may not only impair learning, even of simple tasks, but may disorganize behavior and produce a tendency to function less effectively in future situations of a similar nature.

When we recall that covert anxiety is the result of excessive amounts of anxiety which may have been overt originally, we can begin to understand that covert anxiety may retard or inhibit learning, especially of complex tasks, since the individual is unable to produce the correct response (he does not know what danger threatens him and therefore may make many more irrelevant than relevant responses), and he may be unable to persist in making the correct response even when it occurs "by accident" (since he may not respond to relevant rewards or information in his environment). Another way of stating this is the following. When an individual's learning efforts are interfered with by drives toward inappropriate or diffuse behavioral responses, the "cause" may lie in a relatively high level of covert anxiety. Complex learning tasks are therefore more likely to be unfavorably influenced by covert anxiety than simple tasks, since the likelihood of initiating the correct response and thereby reducing the anxiety is smaller.

Our speculations concerning the involved relationship of anxiety to learning are intended to stimulate the student to consider how much more we need to know before we can begin to offer general principles which govern their relationships. It would be well to emphasize, also, that the concomitant effect of other intervening variables must be considered. Recent studies have shown, for example, that the effects of level of anxiety, the severity of the stress which the situation imposes, as well as the difficulty of the task, produce far different results from those one could predict on the basis of level of anxiety alone [27]. Some studies have shown that one must take into account *both* the level of anxiety and type of personality organization (or its degree of integration) if predictions of responses to conflict are

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[1] With the exception of some studies of sensory deprivation, like those discussed in Chapter 3, most research studies have dealt with anxieties already present in their subjects or have tried to induce only mild anxiety reactions.

to be made [28, 29]. Other studies, especially on learning to make more effective personality adaptation through the use of psychotherapy, suggest that the individual's strength of ego and his self-percept may markedly influence the curve of growth [30]. We can conclude, however, with the thought that the various types of anxiety have important bearings on the nature of the learning process.

ANXIETY, DEFENSE, AND REGRESSION As anxiety increases, no matter what type is involved, the individual begins to respond differently to the task at hand. In the course of time an individual learns to defend himself against anxiety of almost intolerable amounts. He learns relatively specific types of *defense mechanisms,* which he then utilizes in order to reduce anxiety. In the next section we shall discuss some of these mechanisms and see how they are employed. At this point we wish merely to indicate that defensive behavior is, in general, an inefficient and usually somewhat inappropriate behavioral reaction to the anxiety situation. It is less effective than "coping" or "adaptive" behavior, which does reduce the anxiety more efficiently. A defense mechanism involves behavior that is a response to only part of the stimulus situation because the individual has been previously unsuccessful in coping with similar situations which produced the higher levels of anxiety.

An example may make this general point more meaningful. If we have not learned to cope with certain social situations and we feel shy (anxious) in a social gathering, we may get "butterflies in our stomach" or may suddenly develop a headache. The physiological reaction enables us to defend ourselves by giving us an excuse to leave the situation, but the defense is inefficient, since it does not solve the underlying problem. Another type of defense, which we shall presently discuss, that of repression, vividly dramatizes the inefficient manner in which defenses serve us. We may repress a person's name or we may repress some factual information we need for a test answer (that is, we inconveniently forget what we knew quite well) because of anxiety, the source of which we are unaware.

When anxiety is severe and persistent, it may lead to *regressive* behavior. Regression is the substitution of more primitive (i.e., earlier) modes[2] of behavior for more mature modes of

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[2] The term "mode" is used here to mean the patterns of behavioral adaptation which an individual characteristically employs.

behavior. Hysterical crying (or crying "like a baby") is an example of such behavior. Psychotic persons (called insane by the layman) may show bizarre forms of regressive behavior, like playing with feces or having very severe temper tantrums, which had not occurred for years until regression produced by very severe anxiety induced this extreme kind of behavioral reaction. In regression, the primitive behavior is not exactly like that which was previously employed, since the individual has had many years of experience since he first learned these behaviors and is physically and psychologically a different person from what he was in earlier years. Nevertheless, it is a *reversion to an earlier mode of behaving*. Regression may be thought of as an example of impaired learning in which more primitive behavior is substituted for more mature behavior which had already been mastered by the individual.

Defensive Behavior

When anxiety reaches very high levels, behavior becomes severely disorganized. Anyone who has seen an individual in a severe state of anxiety recognizes the terrifying anguish that it entails. Sometimes, as in the case of intense anxiety precipitated by severe traumata like an accident or an experience during war conditions, there is acute reactive anxiety. In other cases in which intense chronic anxiety has been developed, some trivial incident may trigger off highly disorganized behavior. The person, in either case, seems to lose control. He is unable to use his intelligence effectively; behavior is impulsive and highly erratic, and, finally, aimless, frantic behavior or withdrawal into complete passivity or into the world of fantasy may result. To ward off such intense states of panic when other more rational, problem-solving methods of adaptation are not available, the individual employs *defense mechanisms*. Defense mechanisms may be thought of as secondary methods employed, by the individual who has failed to resolve a conflict, to ward off the further buildup of anxiety. They are adaptive techniques to prevent further loss of self-esteem, and they avoid, to some degree, confrontation with what seems to be an insoluble conflict.

The concept of the defense mechanism was proposed by Freud and elaborated by his daughter, Anna Freud [31]. It has

been subjected to intensive experimental study. Sometimes the defense mechanisms have been divided into two subgroups, primary defenses (or primary defensive processes) and secondary defenses (or secondary defensive processes). The former are thought of as the basic, or front-line, protective devices, while the latter are conceived of as supportive devices to assist in the process of inhibiting the development of extreme anxiety.

Defense mechanisms are not the only means of reducing anxiety. Problem-solving, for example, in which cognitive processes are utilized with the maximum degree of efficiency to find a solution to difficulties, is a more effective means of reducing anxiety. But when anxiety mounts in degree and its source is unknown to the individual, problem-solving cannot successfully occur since the factors causing the difficulty are not available for inspection and evaluation. It is when the individual is unable to cope with his conflicts on some realistic basis that defense mechanisms are likely to be employed.

This lack of ability to cope appropriately may be constitutional (e.g., due to some inadequacy of the organism, such as its deficiency in some ability or its immaturity), it may be experiential (e.g., due to lack of appropriate experience in dealing with some kinds of situations), or it may be environmental (e.g., due to factors in the external environment which make a reasonable solution impossible or very difficult). It may also be due to the intensity of the internal conflict and the intense anxiety which has accumulated within the individual, despite adequate constitution, experience, and opportunity. For example, the severe inhibition which some students suffer when confronted with writing a term report for a course may result in endless delay in getting started or the inability to finish the report, despite good intelligence, ample skill in writing, and adequate time for completion of the project. The behavior doesn't "make sense," it is beyond the capacity of the student to conquer, and it gets him into increasingly greater difficulty. It might be due to any one or more of a number of causes which have little to do directly with the present situation, such as: excessive fear of failure which is not realistic; a fear of exposing one's efforts to public scrutiny; an irrational fear of the particular professor or the subject; a low self-esteem system; an unconscious wish to leave the school situation; an unconscious wish to be punished; excessive dependency needs; a phobia

about writing; and the like. In any event, it is defensive, and it leads to inefficient ways of dealing with the problem. It may even lead to complete avoidance of the problem or the problem situation.

We have stressed the negative aspects of the defense mechanism because it is an inefficient means of dealing with conflict and it tends to avoid the real problem. Nevertheless, defense mechanisms have their positive features. In the first place, they serve, even if only temporarily, to allay or reduce anxiety. More than this, they may serve to maintain some degree of self-esteem and thus stave off further disorganization of the personality. The defensive operation gives us an "excuse," as it were, and prevents further self-deprecation.

Thus we can see that defense mechanisms have their place in our lives, since none of us is forever exempt from conflict and since none of us can always find the means of dealing appropriately with conflict situations. When used in moderation, defenses give us "breathing space," and they enable us to avoid a more severe personality disturbance. *It is only when we employ very primitive defenses as a characteristic mode of operation or when we rigidly rely exclusively upon one or two defenses that our personality becomes psychopathological.* In other words, even the healthy individual uses defense mechanisms at times, but their use becomes pathological (unhealthy) when they have displaced reasoning and other more appropriate methods of adaptation.

PRIMITIVE DEFENSE PATTERNS Experimental psychologists have, as yet, given little attention to the problem of the development of defense mechanisms in early life. The reasons are manifold, but the most important ones are probably a lack of adequate methodology for measuring such behaviors and a lack of an adequate systematic theory of defensive development in the individual. Most of our present knowledge of the early development of defenses comes from the work of clinical investigators and theorists, and much of it is open to controversy and further speculation. Moreover, clinical workers have based much of their evidence on a kind of inferential reasoning. They have inferred that the types of defenses they have seen in severely disturbed and hospitalized mental patients are not only "primitive" defenses but are those which necessarily evolve earlier in the lives of all normal individuals. Although such

evidence is reasonable and is, in some measure, confirmed by laboratory studies, it is nevertheless based on clinical inference rather than controlled observation or experiment.

Anna Freud has suggested that, although it is difficult to classify the various defenses into a chronological order, there are some which clearly come early in the life of the individual [31]. She lists *regression* and *reversal* as among the earliest modes of defense. Other psychoanalytic writers suggest *projection* and *introjection*[3] as the earliest forms of defense [32]. But all agree that those defenses emerge first which enable the developing personality to defend itself against the most elemental threats which a highly vulnerable organism has to contend with: the threats of nongratification of basic biosocial needs, including the bodily satisfactions of hunger, thirst, temperature, and such security needs as affectional gratification, consistent attention, and protection against severe physical traumata.

It seems reasonable from what is known of the behavioral development of the infant and child that the organism tends to satisfy its needs, at first, in a highly passive manner. That is, its needs can only be satisfied (i.e. reduced) as someone else provides the means for this satisfaction. Thus, the infant *tends* to operate predominantly with an *approach orientation* to stimuli which impinge upon it, but it does so relatively passively. The major exceptions to this approach orientation occur in connection with withdrawal reflex responses to noxious stimuli. Gradually the infant learns to *avoid* some stimuli which produce or increase tension, as it simultaneously begins to learn to differentiate among stimuli and especially between internal and external phenomena. It learns an *avoidant orientation* when it is frustrated. One can assume that the first defensive operations of the emerging personality involve avoidance behaviors. As internal and external events become more clearly differentiated, the infant begins to seek actively (by looking, listening, and reaching) those objects which may offer some gratification —principally the mother and her attributes.

Since the infant's adaptive behaviors are severely limited by its physical immaturity and it cannot move bodily toward the object which might offer gratification, and since it is limited in its bodily movements away from irritating stimuli, it must rely

[3] See later discussion of these terms, pp. 170–174.

primarily upon *perceptual defenses* to reduce internal tensions. It must learn to avoid those stimuli which irritate by shutting them out of *perceptual awareness*. It can learn "not to see," and later it can learn "not to hear," as primitive means of avoidance. In most instances what may occur is some decrease in visual or auditory intake as a basic defensive operation. If the irritants which the infant experiences are very severe, these perceptually avoidant behaviors may become markedly reinforced, and perceptually approach-oriented behavior may be simultaneously reduced. On the other hand, if conflicts are not severe, approach-oriented perceptual behavior is reinforced.

This primary perceptual dichotomy of approach- versus avoidance-oriented behavior may therefore be conceptualized as the most primitive form of defense mechanism. Some studies suggest that perceptual *adience* (or perceptual behavior which is approach-oriented) is clearly related to greater personality maturity, greater capacity for dealing with traumatic events, and greater capacity for effective behavioral adaptation than is perceptual avoidance-oriented behavior [33]. Such studies suggest that perceptual *abience* (or perceptual avoidance) is related to immaturity, difficulty in dealing with traumatic events, and difficulty in effective behavioral adaptation. To illustrate what perceptual abience involves, we can list such specific phenomena as the following, which were used in one of the studies: perceiving things as smaller than they are; a tendency to perceive stimuli as rotated from the vertical to nonvertical position; a tendency to reduce the dimensions of objects. Perceptual abience may be related to some of the defenses which have been observed and studied experimentally in older subjects; these are principally repression, denial, and regression (see next section).

Recently Solley and Murphy reviewed the clinical and the limited experimental literature on what has been called "autistic perception" [34], which can be defined as the tendency to perceive largely or predominantly in terms of inner personality determinants (as contrasted with outer or environmental determinants). The perceptual response is therefore not veridical (i.e., it does not correspond to external reality). Autistic perception appears to be characteristic of children in the preschool years and is gradually replaced with more veridical perception in normal development. The accumulated evidence indicates that frustration of inner needs in infancy and childhood rein-

forces autistic perception. The two concepts, autistic perception and abient perception, appear to be closely linked. Both suggest that a primary mode of defense involves avoidance on the perceptual level.

It may well be that perceptual abience is a precursor of and an important determinant of other primitive defense mechanisms. Such behavior reduces appropriate input for the organism and may therefore leave it in a poorer position to cope with other conflict situations. Consequently, additional defenses have to be employed to deal with increasing anxiety or with increasingly lower self-esteem. Such defenses continue to produce distortions of reality for the individual and make it ever more difficult to become aware of inner needs and conflicts. Present evidence supports this view, in that *repression, regression, projection,* and *denial* are the predominant mechanisms of individuals who have strong perceptual abience tendencies [35].

OTHER PRIMARY DEFENSES We shall now discuss some additional defenses which are employed early in the life of the individual. Athough such defenses are used occasionally by presumably healthy adults, they usually occur only under great stress, or they do not predominate in the pattern of behavior which such persons usually employ.

Repression Psychologists have learned that forgetting cannot be explained solely in terms of the adequacy of the original learning or the time interval since the learned material was last practiced or rewarded. Forgetting is facilitated by emotional factors associated with the learned material. In general, we tend to forget unpleasant memories more quickly, for instance, than pleasant memories [36].

Repression represents a special case of forgetting in which there is unconscious blotting-out of awareness of impulses that are unacceptable to the self. We noted in the discussion of the experiment on hypnosis how conflict in the individuals produced "forgetting" of the negative instructions although the behavior of the subjects indicated that the instructions were still influencing behavior. This is characteristic of all repression. The individual is unaware of his blocked impulses, but these impulses find some expression in more indirect ways. Repression results in less trauma or negative impact upon the individual, and so the defense serves a "useful" purpose. The student can undoubtedly think of many examples of repression in his own life

Too much mother? Drawing by Mary Petty; Copyright ©
1952; The New Yorker Magazine, Inc.

but can probably think of more instances in the lives of others. Some cases of *amnesia* (or loss of memory) are vivid examples of repression. In such instances the person may forget who he is or what his life was like until the amnesia "lifts." If it does, he is able to remember what he had repressed, and it is discovered that his amnesia represented an attempt to avoid intolerable feelings or impulses. In much the same way, we sometimes "forget" the names of people who were unpleasant to us or the memory of an experience that would make us think less highly of ourselves.[4]

When repression is "massive," that is, when it obliterates a whole area of one's impulse life, then some form of psychopathology is likely to result. As we shall see in Chapter 6, repression is the characteristic defense in *hysteria*, in which sexual or aggressive impulses are intolerable to the individual.

Repression should be differentiated from *suppression*. The latter refers to the conscious inhibition of an act which is socially unacceptable. Such inhibition may become habitual and require little conscious attention, after a time. Cultural conditions teach us to suppress some behaviors which would be obnoxious, thereby enabling us to develop appropriate self-control. When suppression of impulses is very severe or persistent, this cultural practice may cause us to develop repression. When, for example, society, or some section of it, takes an excessively severe, negative attitude toward the expression of sexual impulses, the individuals involved may learn to repress these "threatening" sexual drives. This may explain why hysteria was more common in the Victorian period (near the end of the last century) than it is now and why more women than men tended to develop hysterical personality reactions.

Some degree of repression probably is involved in all defensive behavior [31]. Freud suggested that repression represents the most basic and general of all defense mechanisms. However, in most cases the work of repression is supported by other learned defenses, and this enables the person to retain more flexibility in his behavior than would otherwise be the case.

Regression This type of defense has already been discussed briefly in an earlier section of this chapter. A considerable amount of experimental work has confirmed the fact that

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[4] The content of what is forgotten depends on other factors besides its pleasantness or unpleasantness. The nature of the individual's personality (especially his general disposition), for one thing, is also influential.

regression does occur and that it is greatly facilitated by frustrating external circumstances. However, experimental work rarely involves the degree of stress that real-life conditions may exert. Laboratory conditions of regressive behavior are less likely to be severe or to persist for any considerable period, whereas regression in severely disturbed persons may be quite pronounced and be very difficult to remove.

Common examples of regression may be observed at parties when people "let their barriers down" and behave like children. These are usually only mild forms of regression. Somewhat more severe forms of regression may occur when a person is hospitalized for a serious illness and behaves like a child, has temper tantrums, and requires that everyone wait on him.

A classic study of the effects of frustration which produced temporary regression is that by Barker, Dembo, and Lewin [37]. In this study, children were first permitted to play with a fascinating array of toys; later, parts of these toys, such as the iron that went with an ironing board, and the pond of water that went with the toy boat, were made inaccessible by a wire screen. Many of the children then showed regressive behavior; according to the authors they engaged in behavior that was at least a year more immature than that which they had previously displayed.

Recent studies in sensory deprivation (in which the individual is deprived of or has restricted visual or auditory stimulation, for example) have shown that this type of experience can produce severely regressive behavior under certain conditions [38]. It is interesting to speculate about the types of frustration involved in such studies. In the limitation of the usual types of sensory input produced by such deprivation, these subjects were prevented, in many cases, from effective modes of adaptation. They had relatively fewer ways left to them with which to discharge their impulses or had fewer external frames of reference against which to evaluate their own responses. Hence they had to find means to meet their needs in less mature ways than was normally the case.

In psychopathological regression the individual avoids current conflicts by resuming modes of response that were once more appropriate under earlier and simpler conditons. In such instances he usually utilizes behavior patterns that were highly overlearned in the earlier period. He not only acts as if he were living in more primitive circumstances, but, in doing so, he

gains a certain amount of security by doing well those things that once worked well for him.

Projection This defense has been studied experimentally more extensively than any other. The term has been defined in various ways (see [39] for examples of such varied uses of the term), but it was originally employed to connote that kind of behavior in which the person unconsciously attributes to others those motives within himself which he finds unacceptable. Freud, who coined the term, used it in this sense and saw its most intense manifestations in paranoid individuals who attributed their own undesirable characteristics to others. Paranoid individuals, for example, see others as hating them, whereas in reality it is they who hate others. In this way they are able to deny their own unacceptable impulses. They can also justify their behavior and feel that they must defend themselves against the hatred of others.

Projection, like all other mechanisms of defense, may occur in normal individuals. A series of studies by Sears and others [40 and 41] demonstrated this phenomenon in children and also in college students. In the former study, severely punished children were observed, during doll play, to attribute aggression to the dolls with which they were playing. In the latter study, it was found that college students who were least aware of their own undesirable traits tended to be the ones who were most likely to attribute these traits to other students whom they were asked to rate. Some writers distinguish between *assimilative* and *defensive* projection. In the former, the individual assumes that other people are like him and erroneously, therefore, attributes his feelings to them. In the latter, he assumes that the individuals are unlike him, and he attributes his own unacceptable feelings to them.

Of course, attributing motives or traits to others may be employed with full awareness of what one is doing. The boss who takes out on his secretary the anger he feels toward his wife may be fully aware that he is "projecting." Such behavior is usually called *displacement* rather than projection. It is far less likely to lead to maladjustment than "classic" projection, since one can readily find substitute ways of coping with the known frustrations or one can learn to adapt to the frustrating experiences.

The classical form of projection is probably closely related to another important, but little understood, mechanism, namely,

Introjection. De Wys from Monkmeyer

introjection. As we shall see in Chapter 5, introjection seems to explain a great deal of the child's learning of value systems. This mechanism refers to the process by which one unconsciously assimilates the attributes of others. The young infant introjects the values of his mother, the young child introjects the values of his hero-ideal, and even the young man may introject the values of great public figures of his generation, without being aware of the process that is taking place. Witness, for example, the current marked increase in interest of high-school students in atomic physics.

It seems to some writers that both projection and introjection are necessary to explain some important aspects of personality development in young children (see [42] and [43]). They believe that these mechanisms help us to understand how the healthy infant takes over some of his mother's personality attributes. First he introjects (interiorizes) her feelings and attitudes. Those that are frustrating or uncomfortable for him he projects upon her. Later he introjects his newly formed perceptions of his mother. The continuing process of introjection and projection gradually enables him to test out effective and reality-oriented ways of behaving that are satisfying and keep his tensions within reasonable bounds. However, under "unhealthy" conditions, as, for example, when the mother is

"cold" and severely disapproving, the testing-out of the self is frustrated. In such circumstances, these primitive mechanisms may persist and become markedly reinforced. Under "healthy" circumstances, these mechanisms are replaced by more efficient defenses and other coping methods of behavior which are much more adaptive.

Denial   This mechanism is one in which the very presence of unpleasant reality is blotted out, i.e., denied. One can observe this behavior in very young children who behave as if they were oblivious of intense stimuli impinging upon them. When a young child is brought into a new and frightening situation, he may behave as if he sees and hears nothing. All strong threats may produce this inhibition of responses that might prove dangerous. Denial can be observed in the adult who "shuts out" responses to stimuli which would interfere with his satisfaction, as when he concentrates upon a problem he is working on or when he shuts out distracting noises at a concert.

Another form of denial is known as *negative hallucination.* Here the person hallucinates some stimulus (i.e., has the experience of seeing or hearing something that is not present) in order to conceal the painful experience of missing something that he needs. The young child may hallucinate his mother when she is not there and he feels lonely and insecure. Rapaport believed that this type of thinking underlies fantasy and creative thinking in later life. [44] It is presumed to be a healthy mode of adjustment in the early years of life but becomes pathological when it persists as a recurring tendency in later life.

Denial may occur in fantasy (or in negative hallucinations) or in words and behavioral acts. Its use becomes untenable when the individual's reality-testing no longer permits him to tolerate simultaneously a "make-believe" and a real world. Our previous discussion of perceptual abience suggests that denial may be one consequence of a high degree of such tendencies.

SECONDARY DEFENSES   We shall now consider some of the defenses which are fairly common among healthy adults and then contrast them with other modes of adaptation called "coping behavior."

Reaction formation   Another common defense mechanism involves the substitution of a pattern of behavior that is opposed to some other, objectionable pattern. If, for example, an individual is anxious about his tendencies to be dependent or

passive, he may develop an exaggerated pattern of assertive or even aggressive behavior. Such phenomena are normal in the course of personality development, but they become pathological when they are extreme and compulsive. In reaction formations the behavior appears inflexible or rigid even when the situation is not appropriate. Moreover, the behavior can be recognized as pathological because it is clearly out of proportion to the situation.

Reaction formations are accompanied by repression. One might say that the individual becomes anxious about some impulse or behavior tendency and tries to eliminate it from awareness. Repression of awareness is thus the first step in reaction formation. The development of the reaction formation reinforces the repression, thus supporting the inhibition of the original tendency and assisting in reducing awareness of it.

Phobias represent good examples of reaction formation. The mother who develops a fear of knives and is anxious because she might harm her child with them has developed a phobia about knives. As the phobia increases in intensity, all that is left in awareness is the irrational fear of knives. The aggressive impulses toward the child have been repressed. In their place, there may appear only love and tenderness for the child. This defensive behavior can be recognized as such because the mother becomes overly solicitous of her child's welfare and becomes overweening and engulfing in her affectionate behavior.

There are many other examples of reaction formation. Some prohibitionists develop a reaction formation against their own wish to drink and not only refrain from drinking themselves but wage a "war" against all others who attempt to drink. Thus they "convince" themselves that they have no need for alcohol, disguise the true nature of their anxiety, and are fearful of the possible effects of alcohol on others. Some people who are fearful of their own assumed feminine characteristics try very hard always to appear masculine. They may then detest femininity in other men but be unaware of their own tendencies in this direction.

Reaction formations often assume the form of a caricature of the true trait because they are exaggerated and appear, to the observer, to be irrational. Their irrationality becomes most clearly evident when they are utilized in situations when they are inappropriate.

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Compensation The tendency to increase the strength of one motive in order to minimize the threat of some other motive is termed compensation. In extreme cases compensation may be part of a psychopathological reaction pattern. For example, the individual who feels insecure may develop bizarre methods of calling attention to himself by virtue of some special but eccentric behavior and thus gain some compensatory measure of security. People who have a strong need to "clown" all of the time may be showing this kind of behavior. Another example of an extreme form of compensatory behavior is that of the nymphomaniac—the girl whose sexual drives are so strong that she engages in a rapid succession of affairs in an attempt to gratify frustrated needs for affection. The male counterpart, the "Don Juan," similarly engages in countless love affairs to "prove" his potency as a male.

Most instances of compensation are, however, far less extreme or bizarre than those just noted. The short person may, for instance, compensate for his feelings of inferiority in the physical sphere by learning to excel in academic or artistic pursuits. Used in this way, the defense may actually contribute to greater self-esteem, more favorable feedback from others through their praise and attention, and finally to a decrease in the need for further compensatory activity. In such cases, compensation may lead to effective techniques for self-enhancement.

A specific form of compensation known as *overcompensation* was first discussed by Alfred Adler [45]. In this form of behavior the individual compensates for his weakness, real or imagined, by striving to excel in the same area. Thus, the person who is physically weak may overcompensate by trying to excel in physical abilities. Demosthenes, who had a stutter, overcompensated by putting marbles in his mouth, learning to speak with considerable fluency, and finally becoming a great orator. Cunningham, who suffered severe leg injuries, overcompensated by becoming a champion mile runner. In general, when successful, overcompensation acts as an incentive to intensive learning efforts and to relatively high degrees of success in some activity. Too often, however, this specialized success is accompanied by deleterious effects on the individual's personality because it leads to compulsive attention to the specialized goal and to the neglect of other needs and abilities of the person.
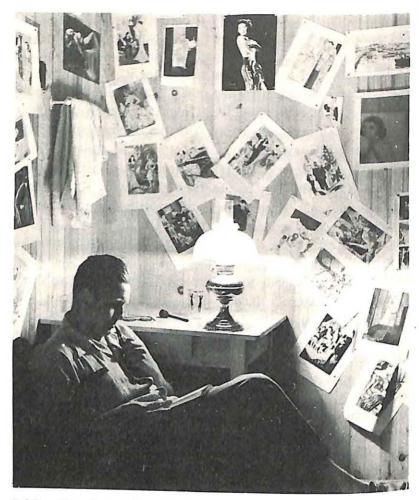
Rationalization This is a form of defense in which the

individual justifies his behavior in terms of some relevant but not completely valid reason. The behavior is seen as inadequate or even humiliating, it is usually an impulsive act, and the individual wishes to find some excuse for it so as to make it more acceptable to himself and others. Rationalization is therefore a form of self-deceit. It is frequently employed without conscious awareness of the basis for the original behavior but with reasonable awareness of the attempt to make it "seem rational" to others. That it can result from unconsciously motivated behavior may be observed in the cases of hypnotized persons who are given some posthypnotic suggestion to do something which embarrasses them. Usually they will offer some lame excuse for doing what they did, not knowing what motivated them to do it.

Rationalization tends to be employed, then, when one's self-esteem is threatened. It may serve to reduce guilt or self-deprecation momentarily; but, since it is a form of self-deceit, it may lead to decreased reality-testing as well as inaccurate self-appraisal if engaged in frequently. Used as an occasional defense, it may serve effectively in preventing unnecessary self-hurt.

Sublimation Freud suggested that in successful psychosexual maturation the energy of the sexual drives was redirected to other than specifically sexual objects and that civilization itself was based on the capacity of individuals to sublimate their sexual drives into the forms of behavior required for cultural and social advance [46]. He believed that sublimation is the highest form of defensive behavior. It was supposed to account for the resolution of the oedipal problem, at least in part. The term has been employed by other psychologists to denote any type of activity in which an impulse is redirected from its original object to some other object or activity, and sometimes the term *substitute activity* or simply *substitution* is employed in its place. Such uses of the original concept of sublimation are defensible only if it is made clear that a really different concept is being used. There is little doubt that many drives are redirected in the course of learning. However, Freud's contention that the redirection of the sexual drives is all-important for psychosexual maturity is a separate hypothesis and needs study in its own right.

Freud believed that many of the highest forms of art and science could be explained, in part, on the basis of sublimation.

Sublimation. Gregor from Monkmeyer

He also indicated that many simpler forms of personal and social behavior, such as "doodling" and dancing, involved sublimation. Sublimation, it was believed, led to reduction of the sexual drive and thus reduced tension when the drive could not be satisfied directly. Some clinicians dispute the validity of this hypothesis, but many offer striking case illustrations of successful and unsuccessful sublimations. The experimental literature is far from conclusive but thus far suggests that sublimation does not always reduce tension level [47].

SOME PROBLEMS CONCERNING DEFENSES We have discussed the defense mechanisms as if (1) they were mutually exclusive and operated independently and (2) our list of defenses was exhaustive. Neither of these statements is true.

Defenses tend to operate plurally rather than singly, one of them often supplementing the other. Moreover, there is not sufficient evidence to suggest that our list of defenses, or the lists of others, is either complete in describing all defensive operations of the personality or that each of them constitutes a really separate entity. These are some of the problems that current and future research on personality dynamics may enable us to understand more adequately.

We have considered some of the ways in which defenses are learned. We know now that different socioeconomic classes tend to employ somewhat different patterns of defenses [48]. We have learned how certain cultural conditions influence the development of preferences for some defenses rather than others [49]. And we have also learned how some defenses may be modified through conditioning, psychotherapy, and even through traumatic experiences. But the final word in the development and meaning of defenses has not yet been written.

Coping Behavior

In learning to deal with inner needs while at the same time responding effectively to the external demands of the environment, the child develops many strategies and techniques which prove more or less useful to him. The complex set of skills which enable him to gain this kind of mastery may be subsumed under the term *coping behavior*. Although some writers prefer to include defense mechanisms within the broader concept of coping (see [50], for example), it seems more reasonable in the light of present evidence to distinguish between these two terms. This does not imply, of course, that the two do not often occur together, forming a more general pattern of adjustment and adaptation, but rather that they seem to constitute at least relatively distinct ways of dealing with frustration, conflict, and tension.

Coping behavior may be conceptualized as behavior which is primarily directed at the external world in the attempt to deal with or master it. The infant is consciously, even if dimly, aware of the obstacles to his gratification and tries to find effective ways of avoiding them, circumventing them, or mastering them. These three basic modes of adaptation to obstacles may assist the individual in gratifying his needs. When successful, coping

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behavior represents a pattern of behavior which leads to reduced tension and increased mastery of the world. Behavioral drives can thus be executed more readily. There is less need for defensive behavior, reality is not significantly distorted or is not distorted at all, and the individual's orientation toward the world tends to be generally approach- rather than avoidance-oriented.

Lois Murphy presents a general review of a series of studies of normal children, seen in infancy and evaluated periodically to adolescence, in which very careful documentation of the development of coping behavior is discussed [50]. She thinks of coping behavior as "a matter of strategy, of flexible management of different devices for dealing with challenges from the environment." But she also states, ". . . coping methods use such resources as alert perception, a reservoir of memories, and so forth, as well as defense mechanisms such as denial and repression. . . ." Thus she seems to include defensive operations within the category of coping behaviors. Yet she also adds, "If his first [coping] efforts fail . . . they may lead to defensive rigidity . . . , which prevents further exploration of potential gratification." As we have noted, it seems appropriate to differentiate between the concepts of defense and coping. It is only when coping behavior (in our sense) is insufficiently effective in gaining gratification or overcoming obstacles, and when tension mounts, that defensive operations are brought into play.

Coping behaviors may involve quite different patterns in different individuals, and the patterns learned in infancy and early childhood may be modified by later experience. Some of the primary elements in such patterns include: the direction and control of attention; inhibition of motor activity which might increase frustration; the employment of spontaneous responses in a flexible manner; the management of anxiety so as to maintain it within tolerable levels; the appropriate expression of feelings; the use of earlier experiences (memory) in solving new problems with cognitive efforts; and the like. These more fundamental coping strategies may be employed quite differently at different times, depending on many other learned skills (verbal, motor, and fantasy) which have become part of the individual's specific learned behavior.

As the individual grows older, he utilizes his coping strategies and techniques in characteristic ways, and we may then speak of his "personality style" (see Chapter 5 for a discussion of this

concept). His style will involve a healthy adjustment if his coping patterns are effective for him, whereas it will involve an unhealthy adjustment if it involves a characteristically high frequency of primary defensive operations. It is reasonable to suggest, it seems to us, that a high reliance upon defenses, especially primary defenses, is accompanied by failure in learning effective coping methods, whereas a low reliance upon such defenses is accompanied by success in learning effective patterns of coping.

There is some evidence to indicate that certain kinds of infant and early childhood experiences lead to highly effective coping methods. In the series of studies which Murphy reports, it was found, for example, that many significant positive correlations were obtained between ratings of infancy behavior in feeding situations (infancy oral gratification) and later clarity of perception, sense of self-worth, "level of reality," and ability to control the impact of the environment. Similarly, significant negative correlations were obtained between oral gratification and criticalness of people, loss of perceptual clarity, and tendency to get fatigued. It was also found that the degree of autonomy permitted by the mother correlated positively and significantly with later (preschool) internal integration (absence of disorganizing defenses), resistance to discouragement, ability to fend off excessive stimulation, and the like. These correlation coefficients in the case of boys were generally in the range of .50 to .65, and some were even higher.

As we noted in the previous chapter, when discussing the effects of early experience on the later characteristics of personality, the problems of establishing causal connections between these two sets of events are not solved by the finding that there are significant correlations between them. Careful control is needed of many other intervening factors which may contribute to such correlations, but the findings are highly suggestive of such a connection. What is critically needed in such studies, or in other studies, is evaluation of cases in which apparently less favorable (or different) conditions in early childhood were still associated with favorable personality outcomes in later life. Frustration and conflict do not lead inevitably to defensive operations and maladjustment; they may, at least in some instances or under certain conditions, also lead to effective coping behavior and healthy personality integration.

One study, in particular, that has attempted to differentiate

between defense mechanisms and coping mechanisms and to relate these two general modes of behavior to relative increase or decrease in measured intelligence deserves special note. Haan studied the performance of 49 male and 50 female subjects on a test of intelligence when these subjects were adolescents and, later, when they were in their middle adulthood [51]. The subjects were carefully rated in terms of their defense mechanisms and their coping mechanisms. Haan based her measures on a conceptual model which assumes that the mechanisms have identical *processes* but exhibit different *properties*. She offers the following list of properties which distinguish the two mechanisms:

Properties of a defense mechanism:

1. Behavior is rigid, automatized, and stimulus bound.
2. Behavior is pushed from the past, and the past compels the need for the present.
3. Behavior is essentially distorting of the present situation.
4. Behavior involves a greater quantity of primary process thinking, partakes of unconscious elements, and is thus undifferentiated in response.
5. Behavior operates with the assumption that it is possible to remove disturbing affects magically.
6. Behavior allows impulse gratification by subterfuge.

Properties of a coping mechanism:

1. Behavior involves choice and thus is flexible and purposive.
2. Behavior is pulled toward the future and takes account of the needs of the present.
3. Behavior is oriented to the reality requirements of the present situation.
4. Behavior involves secondary process thinking, . . . conscious and preconscious elements, and is highly differentiated in response.
5. Behavior operates within the organism's necessity of "metering" the experiencing of disturbing affects.
6. Behavior allows forms of impulse satisfaction in an open, ordered, and tempered way.

As noted in our own discussion, the conception of coping mechanisms is based on the premise that they are responses to external threats but that, at the same time, they are responses to internal conflicts, as well. Haan believed that persons who utilized coping rather than defense mechanisms, preferentially, would show acceleration in their relative intellectual performance over a period of time. She also believed that defensive

behavior would be correlated with a reduction in intellectual performance. These hypotheses were confirmed in her study. She also discovered certain sex differences, as, for example, that men were more accelerative in intelligence than women. These differences seemed to be related to cultural factors associated with sex roles.

Findings such as those cited suggest that the healthy individual "copes" rather than "defends" and that both types of patterns of adjustive behaviors are related to experiential factors.

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FIVE THEORETICAL AP-
PROACHES TO PERSONALITY
STRUCTURE

We shall focus our attention in this chapter on the major theoretical approaches which attempt to explain the organization and structure of the concept known as personality. Our previous discussions were concerned with the ways in which personality *developed,* as well as the *dynamics* and *functioning* of personality. Now we are more interested in those conceptualizations which describe the *structure* of the fully developed personality or, in other words, the ways in which the various attributes of personality relate to each other.

From the earliest times recorded in history, man has at-

tempted to describe his own nature. Philosophers from the time of Plato and Aristotle offered their views concerning the basic attributes of man and the nature of the interrelationships among them. The early philosophers based their views primarily upon observation and introspective analysis. In more recent years, beginning with the latter portion of the nineteenth century, scientists attempted to study personality more systematically and utilized empirical methods. Clinical observations or other methods, largely of a crude experimental character, were used to derive a more substantial theory of personality organization. Perhaps the most impressive first attempts in this direction began with the medical clinicians who were interested in the pathological conditions of their patients. In such early clinical studies of emotionally disturbed people, by Charcot and Freud, speculations were introduced concerning the nature of the maladies suffered by their patients which the known facts of anatomy and physiology were unable to explain. Freud was able, by virtue of long-term observation and therapy, to ameliorate some pathological states. He developed some highly creative hypotheses concerning the origins of their conditions and arrived at some far-reaching theories concerning the nature of the organization of the personality. At the same time, in Germany, the Gestalt psychologists were studying the personality of people by experimental methods and arrived at a different theoretical explanation. In their view, attempts being made by other contemporary psychologists to understand behavior solely in terms of isolated or fragmented aspects of behavior were highly inadequate. They provided us with a theory of man's personality which differed both in emphasis and in conception from the Freudian view of personality organization.

In more recent years extensive experimental studies have led psychologists interested in learning and motivation to develop more general theories of behavior which presumably could explain attributes of personality. Still another path was followed by psychometricians interested in the more precise measurement of behavior. They too have contributed views about the ways in which personality is organized.

We should state at the outset that we are still probably quite far from developing a single theory of personality organization which is entirely satisfying to any one "personality school," let alone to all behavioral scientists. An adequate personality theory should embrace a set of explicit assumptions concerning the

major dimensions of man's behavior and the interrelationships among these dimensions. Moreover, the postulated dimensions must be rigorously defined, capable of reliable observation or measurement, and significant in the prediction of important aspects of behavior and adjustment. No theory exists today which meets these criteria and which embraces sufficiently the major dimensions of man's behavior. Nevertheless, we do have a number of important theories of personality organization which provide valuable insights about significant aspects of behavior and adjustment. They enable us to make some significant predictions and, most important of all, are highly stimulating for further observation, research, and constructive theory development.

We shall therefore sample a few of the views of the way in which man's personality is organized and thereby attempt to summarize both the nature of our progress in this field and the problems which still beset us. We should keep in mind the general assumption of these theories, namely, that the various aspects of the personality remain relatively consistent over the life-span and that their interrelationships are also relatively stable.

Freud's Psychoanalytic Theory

Freud's contributions concerning the structure of the personality deal with two interrelated sets of hypotheses concerning (1) the basic components of the personality, namely, the *id,* the *ego,* and the *superego;* and (2) the levels of mental life, namely, the *unconscious,* the *preconscious,* and the *conscious.* These two sets of hypotheses were frequently revised during the course of Freud's thinking and writing, roughly from the last decade of the nineteenth century, during which he wrote his first book, *The Interpretation of Dreams* [1], and culminating after his death in 1939 with his posthumously published work, *An Outline of Psychoanalysis* [2]. Moreover, the definitions of the ego and its functions were revised considerably after Freud's death by his followers, given far greater emphasis, and now comprise an essential part of psychoanalytic theory. We shall not attempt to trace the many ramifications of these hypotheses but shall, instead, discuss their characteristics as they are now accepted by Freudian psychoanalysts. In the case of the defini-

tion of the concept of the ego, however, some necessary developments in the reformulation of the theory will be considered.

In order to understand Freud's theories, one should be aware of his viewpoint concerning the nature of scientific discovery. He believed that in developing theories to explain human nature—as in other types of theories—there was necessarily a long period of *describing, classifying,* and *relating* phenomena. During this general phase the development of "abstract ideas," i.e., creative hypotheses, was of chief importance in explaining the observed interrelationships of the phenomena. He spoke of these "abstract ideas" as "conventions," and said of them:

> . . . everything depends on their being chosen [these conventions] in no arbitrary manner, but determined by the important relations they have to the empirical material—relations that we seem to *divine* [italics ours] before we can clearly recognize and demonstrate them. It is only after searching investigation of the field in question that we are able to formulate with increased clarity the scientific concepts underlying it, and progressively modify these concepts so that they become widely applicable and at the same time consistent logically. Then indeed it may be time to immure them in definitions. *The progress of science, however, demands a certain elasticity even in these definitions* [italics ours] [3].

Freud tried to develop his theory beyond the stage which is described above, but he himself did not believe that he had yet achieved this goal, although contemporary psychoanalysts now believe (about a quarter-century after Freud's death) that they are in the beginning phases of this development. Thus, Freud would probably have agreed with some critics of his theory who argue that it is "hazy," "nonrigorous," and "abstract." At the same time he would have argued that it was stifling to further discovery to demand more precise and measurable interrelationships prematurely.

THE ID, EGO, AND SUPEREGO . To Freud the *id* constitutes the central core of the personality, and its properties are based on inheritance. It is the inner source of psychological energy and thus the source from which all psychic energy is derived. According to Freud, it is the source of all of our instincts (or drives, as they are now often called), including the primary sexual drives. Through the behavioral manifestations of the functions of the id, the individual may be enabled to become somewhat aware of his inner world of experience.
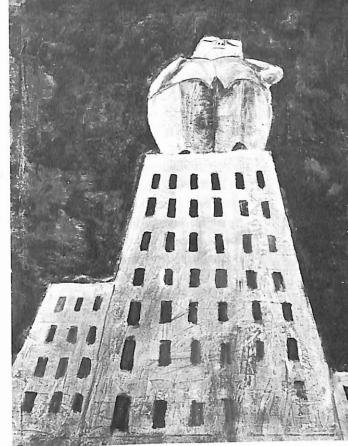
Impulses from the id constantly strive for discharge or expression. As tension builds up when internal or external excitation is present, the energy of the id seeks discharge through some form of behavior and thus returns the organism to its former tension level. The discharge of id energy in this manner is always experienced as pleasurable. Functions of the id are governed by the pleasure principle. The id functions in such a manner as to gain *immediate discharge* and is not significantly influenced by external factors. Gradually, as id energy is expended in this way, the individual may learn the reality principle, that is to say, he learns ways of adapting to the demands of the external world while keeping internal tensions at a comfortable level.
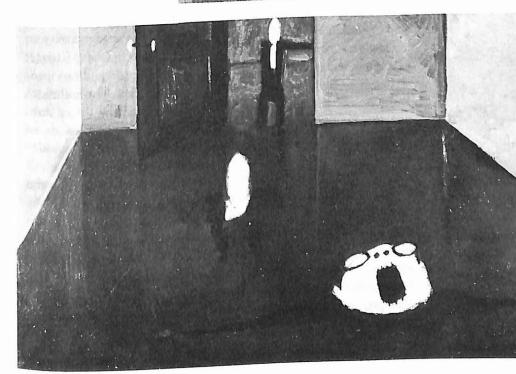
The characteristics of id process were described by Freud as primary processes which are amoral and alogical—uninfluenced by time or space relationships. It is difficult for the normal adult to comprehend the nature of primary process phenomena because, in his own developmental history, he has learned to substitute logical, realistic thinking and behaving for irrational thinking and behaving. Nevertheless, he can catch a glimpse of the operation of such phenomena in his dreams and in his fantasy. In dreams these features of primary process thinking are encountered; the realities of time, place, and size are disregarded, and wish-fulfillment guides the formation of fantasies. The thinking of psychotic (mentally deranged) people is also often characterized by primary process phenomena. The very young child's thinking is also often subordinated to this primary process, when wish or hallucination is experienced as vivid and real.

Another aspect of the id is its reliance upon inborn reflexive patterns of behavior. Response to increased internal excitation, such as pressure upon the bladder, or to strong external excitation, such as increased intensity of light or sound, is effected by reflex mechanisms. Together, primary process behavior and reflex behavior serve to reduce tension and offer discharge of id impulses. The fact that they are, nevertheless, not sufficient to maintain adequately low tension levels causes the organism to develop a secondary structure of the personality—*the ego.*

The *ego* is that aspect of the personality which makes it possible to adapt to reality. It is comprised of those systems which function to fulfill demands of the id, delay or inhibit them if there is conflict with other demands, and act in executive

Symbolic-irrational language of dreams. 'Man at the Top' and 'Come In.' Both paintings by Tomi Ungerer, courtesy D'Arcy Galleries, New York

manner to attend selectively to, or to respond to, external reality. According to Freud, the ego derives all of its energy from the id and develops out of the id in the course of maturation and learning. Unlike id functions, which are not directly responsive to external demands, the ego comes into being as a requirement of the organism in dealing with reality. At the same time, it has to meet the demands of id forces and is essentially a mediating mechanism.

In this original formulation of the nature and functions of the ego, Freud believed that the ego was a derived system, having its entire source in the id. The ego was said to develop out of the id because of two sets of factors. On the one hand, reality does not permit ready gratification of id demands. On the other, the developing organism, as its sensory, motor, cognitive, and affective functions mature, becomes capable of responding in new ways. More recent developments based on both clinical and experimental investigations have suggested that ego functions also have an autonomous origin and development [4], but we shall delay further consideration of this viewpoint for a moment.

In contrast to the operation of the id, the ego operates by the *secondary process*. It enables the organism to seek gratification in newer and more complex ways in coping with the demands of reality. In sum, there are three major aspects to ego operations: (1) it modulates the discharge of id impulses through delay or inhibition, when necessary, and, as a result of this experience, perceptive awareness of inner or subjective needs is developed; (2) it perceives, evaluates, and integrates incoming stimulation; and (3) it develops skills in integrating internal drives into appropriate patterns of discharge. By this means, patterns of response that maximize the fulfillment of id impulses are developed. The development of ego skills takes a lifetime of experience and, as we have noted, is in part dependent upon the biosocial development of the individual. In recent years various methods have been developed for assessing the strength of the ego [5] and for assessing any (psychopathological) damage it may have suffered [6]. We should also note that the ego has still another mediating function, that of keeping an appropriate balance between *id* and *superego* demands, and we shall discuss that function when we consider the "structure" known as the superego.

It became clear that individuals differed considerably in the

extent to which they could develop ego skills. Some of this evidence came from studies of the inheritance of various ego abilities. In addition, clinical evidence indicated that some of the variance in ego skills could not be accounted for in terms of differentiation out of id functions; some individuals seemed to show limited capacity for ego function from the earliest days of infancy; psychotherapy proved to be ineffective in overcoming psychopathology in some individuals because they seemed to be deficient in ego strength. Moreover, the accumulation of experimental evidence concerning such phenomena as exploratory behavior (or *curiosity*), perceptual development, and cognitive functions led many workers either to attempt reformulations of the old drive theories[1] or to reconsider the source and nature of ego functions.

It should be noted that Freud himself proposed a tentative reformulation concerning the source of ego functions [7], in which he indicated that there were probably some inborn ego functions not essentially dependent upon derivation from id sources; but he did not carry this idea very far forward, and he died only two years after the publication of this reformulation. In 1946 Hartmann, Kris, and Lowenstein suggested that the ego had its own independent source of energy and that the exercise of some ego functions (like motility, perceptual clarity, and the like) had both pleasurable effects of their own and increased the possibility of adaptive behavior [4]. In an important paper, Hartmann developed this theory still further some twelve years later [8] and proposed that there was an innate ego apparatus (the "autonomous ego") which had its own laws of development and which was important in explaining the development of locomotion and language development. Erikson carried this line of thinking still further and offered a schema for understanding the development of ego functions as part of an interplay between the organism and social forces impinging upon it [9]. These social encounters provide a series of crises in the life of the child, and the outcome determines the nature of the individual's identification and his sense of adequacy. Klein [10] and later Gardner [11] were able to offer evidence that the "high-level" ego functions involved in cognition apparently had their own sources of growth and contributed significantly to the differences among individuals in their capacity for effective

[1] See the authors' companion to this volume, *Psychology: The Science of Behavior* (New York: Harper & Row, 1965), pp. 323–370.

interpersonal behavior. Although it has not often been related directly to this problem, Piaget's theory, based largely on observational studies, which proposed that there are inborn *schemata* (or mechanisms for assimilating external stimulation) which change in the course of the individual's growth, and are replaced by new schemata when they prove to be inefficient, has some obvious similarities to these newer developments in the conception of the ego [12].

The *superego* is the third basic structure of the personality, according to Freud. Once ego functions have become fairly well established, the superego begins to develop in childhood. It results from the interactions of the child and his parents (or other supervisors of his activities in early childhood). When the child is punished for certain behaviors, he gradually learns to internalize these inhibitions, which then become that part of his superego known as the *conscience*. He does this to retain the love of his parents, whose love he seeks. These internalized controls then make him do what he was originally unwilling to do. When he engages in behavior in accordance with these internalized controls, he avoids displeasure (or *guilt*). But the child not only internalizes the inhibitions known as conscience; by a similar process, he also internalizes his parents' value systems, which tell him what he should do or positively strive for. These become part of the superego known as *ego-ideals*. Thus the superego inhibits expression of id impulses or, when it fails to do so, in accordance with internalized prohibitions of the conscience, it produces guilt; and the superego facilitates those aspects of behavior that are in accord with its ego-ideals and thereby enables the individual to experience pleasure (or *pride*).

This structure of the personality, consisting of the three basic components—id, ego, and superego—functions as a whole, the three subcomponents being closely interrelated. During periods which are regarded as "healthy," there is a harmonious interplay among these three systems, and energy is expended while being experienced as pleasurable. There are crises during the course of every individual's life when these three subcomponents are not in harmony. Relatively normal crises occur during adolescence, and there are crises which occur more frequently or persistently in disturbed individuals when there is moderate or extreme disharmony. Maturation and learning increase the strength of one component relative to the other, and thus the

relative balance among the systems is in a constant state of growth and change. Both the ego and superego are considerably affected by life-experiences, whereas the id presumably is never directly influenced by these factors.

CONSCIOUS, PRECONSCIOUS, AND UNCONSCIOUS LEVELS

In trying to understand the nature of human motivation, Freud gradually came to the conception of "levels of mental life." Like others before him, he recognized the operation of unconscious forces in the behavior of the person, but, unlike others, he came to believe that these unconscious forces were not trivial phenomena to be occasionally taken into account in explaining behavior. He believed these unconscious forces to be the mainspring of much significant behavior. Today, many psychologists acknowledge the importance of unconscious processes, although they may prefer to describe them in terms other than Freud utilized. For example, Murray and his co-workers deal with the significance of unconscious factors in the production of fantasies and in the relationship of such factors to achievement as well as to adjustment [13].

Freud postulated three levels or layers of the mind, the conscious, the preconscious, and the unconscious. He described the *conscious layer* as that which is immediately within our perceptual awareness. Freud believed that this area of the mind was relatively "narrow" in that it contributed only a small fraction of awareness of what was going on in the personality. Moreover, he ascribed much less importance to conscious phenomena than most other psychologists of his day. Although people ascribe conscious motivations to what they do, and these conscious motivations have some role in our behavior, man is not as rational as we would like to believe. Much of our motivation is not on the conscious level. The conscious level of mental life is most closely linked with "ego operations" of the personality and enables us to deal with objective reality or to find ways of defending against it.

The *preconscious layer* of the mind consists of those experiences which are not within immediate awareness but can be called into play with moderate or minimal effort. Thus, memories of things past which we do not recall immediately but which can be recalled when we make the effort are part of the preconscious and play an important role in our behavior. We sometimes are aware of this role of the preconscious as we note

that our behavior was prompted by information resulting from past experience which was not focal in our attention as we performed the behavior. In buying clothes, making a date, or in selecting a route for a journey, we may be able to isolate previous experiences which guided our decisions. Freud postulated the presence of an unconscious level of the mind to account for the vagaries of attention (later called *selective attention* by the psychiatrist, Sullivan, and more recently called "scanning" or "field dependence" by experimental psychologists). Figure 5.1 is a diagram of the relations of these three layers, or levels, of the mind.
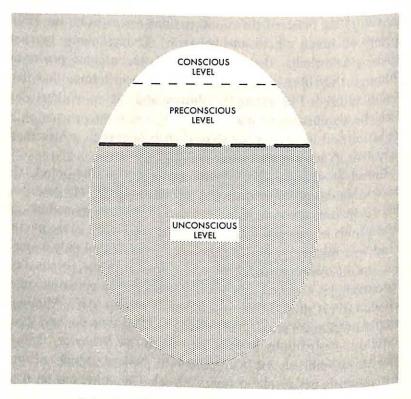
FIGURE 5.1 *Graphic representation of relations of the three levels of the personality.*

The *unconscious layer* of the mind is not available to consciousness except under unusual circumstances and only with very great effort. It consists of those aspects of one's psychological experience which have been repressed or have otherwise become unavailable to one's awareness. Nevertheless, unconscious processes are highly important in our everyday lives and guide much of our thinking, feeling, and motor behavior. Our

most important choices concerning such things as friendships, marriage, vocational decisions, and prejudices are based on levels of experience of which we are largely unaware. Freud believed that unconscious processes revealed themselves through (1) *slips of the tongue,* in which we reveal unconscious factors of which we are unaware; (2) the phenomena of *hypnotism,* in which the subject can be shown to be motivated by unconscious forces; (3) *dreams,* in which important memories and affects that have been repressed appear in disguised or symbolic form; (4) *sudden insights* or creative solutions to seemingly insoluble problems that occur without conscious awareness of the factors leading to the behavior (5) *hysterical symptoms* (often physical), with no known organic basis and with no known psychological causes (to the person who is ill); (6) the emergence in psychoanalysis of *deeply buried memories* which appear to be significant in determining the person's personality reactions.

Many studies have demonstrated the utility of the concept of the unconscious. Sears summarized many of these in his monograph [14]. Recent studies on attention [15] and on perception [16] have been influenced by the assumption of the unconscious and have provided evidence for its plausibility. As we shall see in Chapter 8, many of the devices for assessing personality are based on the assumption of an unconscious and have been used not only in the study of individual personality but in many types of studies of social interactions. *Projective tests* are devices of this kind which attempt to get at deeper levels of motivation by offering the subject a relatively unstructured stimulus which is interpreted by the subject in his own unique way. The trained psychologist in turn interprets these responses by recognizing that they are derivatives of the subject's unconscious.

Factor Analysis and Personality Structure

Quite a different view and approach toward understanding personality structure is sponsored by those who may be called "factor analysts of personality." These workers base their view of personality structure on empirical findings derived from statistical studies of the intercorrelations among various measures of personality functioning. Sometimes they have been

guided in the selection of the measures to be studied by the findings of clinicians; more often they have been stimulated by the evidence derived from developmental and experimental studies of human personality.

THE NATURE OF TRAITS To understand the factor-analytic findings, we must understand, first, the meaning of the term "trait" which is at the base of all studies employing this method. A trait is usually thought of as a relatively persistent way of behaving in a number of different, but related, situations. For example, shyness may be thought of as a trait if we assume that a person who is shy in one situation also tends to be shy in other, related situations. The presumed trait of shyness is not an entity that exists in reality; it is rather an abstraction, derived from repeated observations of behavior which appear to have a common characteristic. Some workers, as for example Eysenck [17], suggest that the concept of trait is based upon a lower-order concept, that of *habitual responses*. Habitual response patterns may be defined as ". . . specific responses which tend to recur under similar circumstances," that is, similar responses to similar life-situations. And, of course, underlying habitual response patterns, one can describe more detailed specifics of behavior, i.e., those responses which occur only once in a given type of situation. An example of such a specific response would be that of an eye blink in response to stimulation of the eye by an increase in light intensity. As we proceed up the ladder of hierarchical organization of the personality, we move from specific responses to habitual response patterns to traits. The trait may be seen as a kind of group factor, and it depends upon a group of responses which have an organizational unity or coherence. A trait is based upon the observed correlation of behavior patterns across a number of different situations. Figure 5.2 may make this concept more clear.

One of the persistent problems with which psychologists have attempted to deal is that of determining the minimum number of traits necessary for describing personality or required for predicting responses of an individual in new situations. Obviously, if the number of traits required to do this job is very large, then little can be said concerning the major characteristics of personality organization, for we would need as many traits as there are possible behavior patterns.

Some psychologists object to the use of trait-names as an
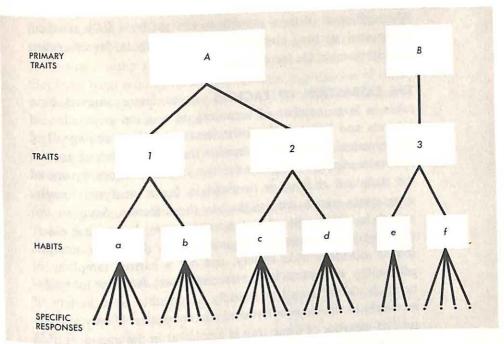
FIGURE 5.2 *Diagrammatic representation of hierarchy from specific responses to primary traits.*

approach to characterizing personality structure on the ground that their research indicates that a very large number of traits is needed to describe personality. For example, Odbert and Allport, who made a very thorough study of this problem, found that about 18,000 terms were needed to account for all of the subtleties of human behavior and that even this number of traits did not account for all of the variability [18]. However, factor analysts have tried to demonstrate that the personality structure can be defined by a relatively small number of general categories, each of which is composed of several traits which have relatively high intercorrelations among themselves. If this can be done, they argue, then it may be possible to develop not only an economical method of measuring the major general components of the personality, but these components, or *factors* as they are usually called, may become highly effective in predicting personality reactions.

Before these factors can be isolated, it is necessary, therefore, to have some idea of which traits are likely to have some high degree of significance; effective ways of measuring such traits must be developed; and the various measures of a given trait must be shown to be measuring the same behavioral attribute.

Although none of these conditions has yet been fully satisfied, factor analysts have already gone a long way in demonstrating the usefulness of the factor-analytic method.

THE EXTRACTION OF FACTORS Some factor analysts have taken a large number of measures on a given population of subjects and have obtained the intercorrelations among all of the measures. Then they determine the least number of general factors necessary to account for the intercorrelations by one of the statistical techniques involved in factor analysis. Finally, appropriate names are assigned to these factors. Such an approach has been criticized on several counts. In the first place, the selection of traits to be included in the factor analysis should include a wide variety, and not a narrow sampling, of personality attributes. In the second place, factorial investigations should be based as broadly as possible on a variety of measures of the same behavioral characteristics. If only a single type of measure of some trait is employed in the measures used in the factorial analysis—such as responses to questionnaires or rating scales—there is no assurance that a given factor obtained from the analysis has any meaningful generality. Therefore, several very different types of measures of the same characteristic should be employed. Unfortunately, this has not been true in most factorial studies. And, in the third place, the demonstration that there is a factor can be useful only if the factor can be shown to occur in several subject populations. Otherwise, it may be only an artifact of the selection of the sample in which it was discovered, or it may only have applicability in a small sector of the general population. Once again, factorial studies have seldom been applied to enough widely divergent types of populations, such as to both normal and abnormal groups, or to both adults and children, or to well-educated persons and not-so-well-educated persons.

In recent years, studies have been made which have attempted to meet the criticisms noted above. These studies have been rather large-scale projects involving large numbers of subjects and varied types of populations and have only been made possible by the recent availability of high-speed electronic computers. Even so, they often take years to complete. Summing up the results of such studies, most psychologists believe we are just scratching the surface—just beginning the development of satisfactory techniques of studying the personality by

factor-analytic methods. Cronbach reviewed the major factorial studies of personality and concluded, "There is at present no consensus among factor analysts as to the number of factors that have been reliably identified, the best organization of them, or their most appropriate names" [19]. Nevertheless, the future promise of the method suggests that it will become an increasingly powerful tool in personality research.

The method of factor analysis begins by calculating the intercorrelations among several measures. Suppose, for example, that in a large population of subjects we find the following intercorrelations among four tests of personality, as in Table 5.1. We note that tests A and B have a great deal in common with each other but have little in common with the

TABLE 5.1. THE INTERCORRELATIONS AMONG FOUR TESTS

	Test B	Test C	Test D
Test A	.85	.10	.05
Test B		.08	.15
Test C			.75

other tests, C and D. We can also note that C and D have a considerable correlation but that neither of these is highly correlated with either A or B. Thus, we might assume from these data that these four personality tests show the presence of two rather distinct sets of factors: Factor A-B and Factor C-D. If we concluded that only two factors were necessary to describe personality, on the basis of these results, we would be making an unwarranted generalization, as we indicated in our previous discussion of the general criticisms of factorial studies. For, if we had chosen to work with only tests A, B, and C, we might just as unwisely have concluded that personality consisted of one group factor, A-B, and one specific factor, C. In other words, the degree of generalizability one can obtain from intercorrelations depends, at the very least, upon the number of measures one has used.

But suppose that we start with a large number of personality measures and apply these measures to a variety of subject populations. Then we obtain the intercorrelations among all of the measures. Mere inspection of the table of intercorrelations will be very confusing. Some method is needed for obtaining a statistical evaluation of the intercorrelations to find clusters of

highly correlated items which represent presumptive factors. Mathematically it is possible to determine the smallest number of factors needed to account for all of the clusters of correlated items. Once the minimum number of factors has been obtained, it is possible to describe each individual test measure by its relationship to the newly discovered factors. Mathematically, it is possible to transform the original factor analysis to accomplish, more efficiently, certain predictive results. Most American psychologists attempt to locate "pure" personality dimensions. This type of decision is related to the goal of the study, whether this is to describe the data by as few broad factors as possible or to describe the data by means of clear-cut, specific factors.

Generally speaking, when personality tests are factor-analyzed, a large number of factors emerge. More factors emerge when variables related to personality are being analyzed than when items are selected which measure some more selective characteristic of behavior, for example, musical ability. The problem of describing personality is very complex, and the measures of personality traits can emphasize quite different aspects of what may be the same trait. The tests used to determine a trait can be measured in terms of a person's behavior or in terms of how well he performs that behavior. They can be measured by objective tests, or they can use evaluations of a person's behavior made by observers. Even physiological variables can be used in traits defined by factor-analytic techniques.

SOME FINDINGS Having noted the difficulties as well as the promise of factor-analytic methods of studying personality structure, let us now review the results of this approach. We shall follow the summary provided by Guilford [20], who bases his conclusions on the reported findings of a large number of investigators. Guilford describes four aspects of personality: somatic, aptitudes, temperament, and hormetic disposition (or motivational traits). Most pertinent in this context is the analysis of temperament. On the basis of factor-analytical studies he believes it possible to divide temperamental factors into three subgroups: general, emotional, and social. Each of these, in turn, is divided into five categories. (See Table 5.2.)

The *general* category of factors of temperament consists of three factors which Guilford believes have been widely accepted (at least among factor analysts) and two about which there is far

TABLE 5.2. GUILFORD'S MATRIX OF TEMPERAMENT FACTORS

Kind of Dimension	Areas of Behavior Involved		
	General	Emotional	Social
Positive vs. negative	Confidence vs. inferiority	Cheerfulness vs. depression	Ascendance vs. timidity
Responsive vs. unresponsive	Alertness vs. inattentiveness	Immaturity vs. maturity	Socialization vs. self-sufficiency
Active vs. passive	Impulsiveness vs. deliberateness	Nervousness vs. composure	Social initiative vs. passivity
Controlled vs. uncontrolled	Restraint vs. rhathymia	Stability vs. cycloid disposition	Friendliness vs. hostility
Objective vs. egocentric	Objectivity vs. hypersensitivity	Poise vs. self-consciousness	Tolerance vs. criticalness

SOURCE: J. P. Guilford, *Personality*, New York: McGraw-Hill, 1959, p. 409.

less consensus. The factor of *confidence vs. inferiority feelings* has been found in quite diverse types of populations, such as adults, children, normal people, and abnormal people. It therefore deserves recognition as an important group factor. The factor is assumed to be a continuous variable. It has a "negative end," which may be defined by such characteristics as discontent with oneself, guilt, and egocentrism. This constellation may surprise us; one might have suspected that guilt would not be a necessary part of feelings of inferiority and that egocentrism would not inevitably be associated with this factor. It may be that there are various forms of guilt, some of which are not integrally associated with inferiority, and the same thing may be true for egocentrism. At any rate, this constellation has been *measured* and does, in fact, occur. Only further experimental factor-analytic work will tell us more about the final meaning of the factor of inferiority.

The second of the three subcategories of the general aspect of temperament may be called *objectivity vs. hypersensitivity*. The hypersensitive end of this continuum may be defined by such characteristics as recoil from reality, worry over humiliating experiences, and hypersensitivity (at the extreme, *paranoidal*)

concerning the presumed critical attitudes of others toward oneself. Some workers have linked the hypersensitive end of this scale to Jung's concept of introversion (see p. 212 ff.). It is also worth noting that the hypersensitive characteristics have been more clearly established than the objective aspects of this group factor.

The third general category is that of *alertness vs. inattentiveness*. This factor has resulted from quite recent factorial studies and may be defined as ". . . a matter of keeping in rapport with the environment versus being inattentive or absentminded" [20]. The characteristics found in this factor seem to relate to *spontaneous* rather than *directed* attention. The potency of this variable in determining the capacity for learning and for tolerating changing conditions as well as in characterizing some aspects of the adjustment of the individual (see Chapter 6) has been attested in a great variety of research studies.

At this point the reader may have become aware of the fact that these three factors seem, in common-sense analysis, to have some things in common. Isn't egocentrism part of both inferiority feelings and hypersensitivity? Isn't being inattentive more likely to be found among inferior individuals than among others? The point is that whether these factors are or are not really independent is a matter for experimental study and not a matter of semantics alone. Our common vocabulary is suffused with terms which have arisen out of popular conceptions (perhaps misconceptions), and one of the virtues of factor analysis and of correlated experimental study is that it can help us to clarify and add precision to present-day "fuzzy" conceptions.

Often the factors emerging from factor-analytic procedure contain characteristics which do not seem to fit together in any common-sense rubric. At other times there does seem to be a label which could characterize the items making up part of a factor. Some workers (like Cattell [21]) have invented entirely new verbal names of factors to avoid the confusion that might be introduced by the use of popular terms to describe factors.

The major grouping of *emotional factors* which Guilford has proposed consists of scales related to: *cheerfulness vs. depression; emotional immaturity vs. maturity; nervousness vs. composure; stability vs. cycloid disposition; poise vs. self-consciousness.* Again, as with the category of general factors discussed previously, not all of these factors have been found in all factor-analytic studies. Depression, for example, seems to be a multi-

faceted phenomenon. It is quite difficult to obtain self-ratings of depression because of the withdrawal and resistance character-istics of many depressed individuals. Further, it is quite different in children and adults. The term *depression* is used to cover many different kinds of things, both in popular usage and in clinical diagnosis. It will remain for clinical and experimental studies to define the characteristics and to determine the specific parameters of the phenomena covered by this rather broad spectrum of behaviors. On the other hand, the factor of *stability vs. cycloid disposition* has been pretty well established and well defined. The cycloid person shows wide swings or abrupt swings in mood, largely independent of external cir-cumstances. This characteristic has been linked to certain kinds of psychopathology, as we shall see in Chapter 6.

The social-disposition category consists of scales purportedly measuring *ascendance vs. timidity; socialization vs. self-sufficiency; social initiative vs. passivity; friendliness vs. hostil-ity;* and *tolerance vs. criticalness.* Research studies have shown that these factors are related both to specific environmental conditions and to previous learning and conditioning. Never-theless, the factors tend to emerge regularly from factor-analytic studies undertaken in Western cultures and especially in popula-tions of college students and other "captive populations." They are related to various kinds of social capabilities and have been found useful in many kinds of predictive studies. They may be thought of as social skills which the individual has developed out of his past experiences; they may also be dependent in part on inherited characteristics of the individual.

Factor-analytic studies have provided fresh insights into many aspects of personality, they have challenged some pet clinical theories, and they have stimulated much research. They do not appear to be the final word, and they depend, them-selves, upon theories and hypotheses which have been devel-oped from clinical or other types of observations and upon experimental studies which have produced significant findings about various traits and the antecedent conditions.

The contrast between the clinical and psychoanalytic ap-proach to the theory of personality organization, on the one hand, and the factor-analytic, on the other, is quite striking. The former lays stress on a few fundamental characteristics of the personality which are assumed to embrace its most significant aspects, while the latter tries to encompass the whole organiza-

tion of the personality with a much larger number of group or primary factors.[2] The former has emerged out of the clinical study of disturbed persons, while the latter has placed its trust in the mathematical analysis of various measures of presumably significant traits. Perhaps the greatest contrast lies in the dynamic interrelationship posited to exist among the components of the structure, as viewed by the psychoanalysts, whereas the interrelationships, if any, proposed by the factor analysts are those found in behavior as it is observed and measured. Despite these differences, the two approaches are not necessarily in opposition to each other, although the means of reconciling and integrating them may not yet exist. They rest upon different methodological assumptions and have different subgoals. But both are attempts to provide a more parsimonious explanation of the nature of the structure of the personality than a common-sense view can offer.

Type Theories of Personality Organization

INTRODUCTION   The general goal of *type theories* of personality organization is not so far removed from the factor-analytic approach as at first might seem to be the case. Both have as their object the description of personality structure in terms of an economy of factors. And both assume that an individual's structure, so far as personality is concerned, remains more or less constant over the life-span.

Most type theories have attempted to describe the major components in the personality by means of a very few all-encompassing characteristics, which were thought to be so important that they could safely be used to predict most of the significant behavior of the individual. People were thought to fall into "types" describing their central personality characteristics. The layman is prone to accept this line of reasoning about personality because it makes for easy generalization and does not require painstaking attention to the highly complex and unique qualities of each human being. Such characterizations as "the incurable optimist," "the sad sack," "the bull in the china shop," "the smooth, oily salesman," and "the human dynamo"

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[2] "The major exception to the relatively large number of factors suggested by factor analysts may be found in the work of Eysenck, cited previously [17].

seem to tell us at one fell swoop all that we need to know about the person. Although they may, in fact, call attention to some outstanding characteristic, they hardly begin to describe the variegated nature of human behavior. They lend themselves to easy stereotyping of people by class, by race, by nationality, and even by political conviction. They leave unsaid the tremendous differences among people who are characterized as being of the same "type." Therefore, they distort the very characteristics of the people they seek to describe. They assume that a "type" characteristic is an all-or-none phenomenon and that people of a given type are alike (and alike to the same degree) in the essentials of the "type." In this respect they deny the validity of the scientific discoveries of psychology which have demonstrated that each of the characteristics with which a person may be described is a "more-or-less" phenomenon, falling on a *continuum*. They tend to assume some genetic basis for the type characteristic and utterly neglect the influence of cultural conditioning and learning. Thus, once a person has been "typed," he must unfailingly and forever display the appropriate characteristics of that type.

Nevertheless, attempts to develop type theories of personality have characterized man's search for an explanation of human nature from time immemorial; they still are much in evidence today, although most modern psychologists are highly critical of such approaches. Hippocrates, usually thought of as the father of modern medicine, proposed about 400 B.C. that all men could be grouped into four main types of temperament: the *phlegmatic;* the *choleric* (or irritable); the *sanguine* (or optimistic); and, the *melancholic* [22]. He believed that each person could be characterized as belonging primarily to one of these four groups and that the dominant temperament of the individual was based on the dominance of one of the then four basic humors (body fluids); phlegm, yellow bile, blood, and black bile. Neither the types of temperament nor the conception of body humors has withstood the accumulation of evidence from the fields of personality research or human physiology.

However, Hippocrates' contributions in this area went largely unchallenged for centuries. Much later, in the nineteenth century, with the advance in the field of physiology, revisions and refinements of his theories were proposed. Attempts were made to relate aspects of human physique to physiological characteristics, on the one hand, and to personality character-

istics, on the other. These explorations culminated in the work of Ernst Kretchmer, who in 1921 published his *Physique and Character* [23]. This psychiatrist was interested in demonstrating the inherent relationship between type of physique and type of major personality adjustment. He believed that he could demonstrate that physique was a major determinant of the personality mode not only in psychosis (or insanity) but also within the range of normal adjustments. It may be worth while to examine some of his formulations and some of his evidence.

Kretchmer devised a system of classifying the major parts of the human anatomy by means of "objective" check lists. On the basis of an analysis of his data, he proposed a fourfold classification of types of bodies. The *asthenic* was described as having ". . . a deficiency in thickness combined with an average lessened length." In common parlance such people would probably be described as frail and thin in general appearance. The *athletic* was described as ". . . (having) a strong development of the skeleton, the musculature and also the skin." This was the characterization for a middle-sized to tall man, with a powerful body build. The *pyknic* was classified as ". . . characterized by pronounced peripheral development of the body cavities . . . and a tendency to a distribution of fat about the trunk. . . ." These are people with short, plump bodies. And, finally, the *dysplastic* characterizes those individuals who show marked inconsistencies in the various parts of their bodies so that they may show athletic features in some part or parts while manifesting pyknic features in another part or parts.

Having developed what he regarded as a reliable rating scheme for these body types, Kretchmer proceeded to check his hypothesis that each type was associated with a particular mode of adjustment. His major findings concerned the relationship between two body types and two psychiatric conditions. His prior observations had convinced him that there was a biological affinity between the asthenic physique and schizophrenia and that there was, similarly, an affinity between the pyknic physique and manic-depressive psychosis. (See Chapter 6 for a description of these psychiatric conditions.) In a study of 260 psychotic patients suffering from either schizophrenia or manic-depressive psychosis, he obtained the findings presented in Table 5.3. It will be noted that the evidence seems to favor his hypothesis, since 81 schizophrenics were rated as asthenics and only 4 asthenics were manic-depressives, whereas 58 pyknics

TABLE 5.3.   KRETCHMER'S FINDINGS ON RELATION OF TYPE OF
PHYSIQUE TO SCHIZOPHRENIA AND MANIC-DEPRESSIVE
PSYCHOSIS

| | Type of Physique | | |
Type of Psychosis	Asthenic (N)	Pyknic (N)	Others (N)
Schizophrenia	81	2	92
Manic-depressive	4	58	23

SOURCE: E. Kretchmer, *Physique and Character*, New York: Harcourt, Brace & World, 1925.

were manic-depressives and only 2 were schizophrenics. Of course, there were 27 manic-depressives who were *not* pyknics, and there were 94 schizophrenics who were *not* asthenics. However, even if the relationships between body build and tendency toward a particular form of psychiatric disorder held up in other investigations of this type, the validity of the hypothesis would still remain in serious question. The student would do well to consider what questions remain before the hypothesis can be either rejected or accepted. For example, do the relationships hold up when sex of the subjects or their culture is controlled in such studies? Do the relationships hold up when age, which is a factor in weight gain and change in body type, is controlled? (Schizophrenia tends to occur earlier in life than manic-depressive psychosis.) How much *contamination* (or observer bias) enters into the findings?

SHELDON'S TYPOLOGY   A more sophisticated approach to the study of the relationship between physique and temperament was made by William H. Sheldon, a psychologist and physician [24]. He devised a method for *scoring* individuals on three basic components of physique. His method, called *somatotyping,* rejects the idea that people can be grouped into distinct physical types and instead evaluates them on the basis of the *degree* to which they possess each of a number of components. This method was developed on the basis of painstaking empirical research. He secured three standard photographs (frontal, lateral, and dorsal views of the naked body) of about 4,000 male college students taken against a standard background. Examination of these photographs by Sheldon and his collaborators led him to conclude that *three dimensions* were sufficient to describe the structure of the body. Each of these three

primary components could be rated on a scale from 1 to 7 (from low to high) based on carefully specified anthropomorphic measurements and ratings. The three components were termed *endomorphy, mesomorphy,* and *ectomorphy.* The *endomorph* is a person who is high on the scale of endomorphy and low on the two others. He has highly developed digestive organs, is soft and round, and shows an underdevelopment of bone and muscle. The *mesomorph* is a person who shows a predominance of muscle and bone. The *ectomorph* is a person with an elongated body, a large central nervous system in relation to his size, is fragile, and has relatively little connective tissue. A person rated 1–6–2 would thus be low in endomorphy and ectomorphy and high in mesomorphy. The terms used to describe the three primary components were selected to indicate the cell layers in the body from which the body tissues developed. The concept of somatotype was coined to differentiate the measure from those of the *phenotype* (the overt, and perhaps transient, aspects of the physical build which might be influenced by aging, nutrition, and disease), on the one hand, and the *morphogenotype* (the underlying characteristics giving rise to the phenotype). It is thus, in Sheldon's own words, ". . . a prediction of the future succession of phenotypes . . ." other conditions (notably nutrition and health) remaining constant (see [24]).

In developing his Temperament Scale, Sheldon first selected a list of 650 traits from the relevant literature. He reduced this list to 50 traits and then, by means of an intensive study of selected individuals, discovered the clusters of traits that were necessary to define the temperament of these subjects. By means of this procedure, three primary clusters of traits were isolated, the traits within a cluster correlating with each other to the extent of $+ .60$ and with those in the other clusters at the level of $+ .30$. Each cluster was defined by twenty specific traits, and each of these could be rated from 1 to 7. A person's temperament on each of the primary components was based on the total of the twenty rated traits comprising that scale. The three scales were labeled: *viscerotonia* (high in sociability and a glutton for affection and food); *somatotonia* (liking for physical activities, strong need for the use of the musculature, and aggressive and callous toward others); and *cerebrotonia* (restrained, secretive, self-conscious, and overreactive to stimulation). In using the scale, the observer makes a prolonged study of the individual

and then rates him on each of the twenty traits for each of the three primary scales.

Sheldon was interested in discovering how much relationship there was between the somatotype ratings and the temperament ratings. In an initial study of 200 white male college students, he reported surprisingly high correlations according to his predictions [25]. Thus endomorphy correlated with viscerotonia to the extent of + .79, mesomorphy with somatotonia to the extent of + .82, and ectomorphy with cerebrotonia to the extent of + .83. All of the other intercorrelations among these variables were negative. These findings would appear to be a significant demonstration of the relationships between body build and temperament. They are, clearly, much higher degrees of relationship than have generally been reported in the personality research literature between physique and temperament or, for that matter, between various measures of personality in general. What do they mean, and how well do the findings stand up?

The first question that one must ask of evidence presented in support of some theoretical position is whether the reported empirical findings are replicated by other investigators. In the case of Sheldon's findings this question is particularly important since the ratings made of temperament, even though made with great care and after a considerable period of study of his subjects, were made by Sheldon himself. Sheldon argues that his temperament ratings were made *before* his subjects were somatotyped and that, in any case, the ratings were objective. Both of these arguments are cogent and true, but it is quite possible, nevertheless, that in his intensive studies of his subjects Sheldon got to know (i.e., to contaminate because of this bias) both the temperament and the physical qualities and thus "loaded the dice" in his favor. The criticism can be answered appropriately, however, only by the presentation of findings from other research, with suitable controls for testing the reliability of the findings. Unfortunately, other studies using *ratings* have found, at best, only limited support for Sheldon's findings. And when the studies have employed *tests* of personality characteristics rather than ratings, there is almost no support at all for his thesis [26]. Sheldon argues that his somatotyping procedure is quite intricate and requires careful training by the rater, but other careful workers have, nevertheless, been unable to replicate his results.

Other criticisms of the theory proposed by Sheldon to ac-

count for his findings point out that there is practically no theory at all. There are no carefully developed postulates, no set of interrelated hypotheses to explain the alleged relationships, and no significant derivations from the theory that are amenable to testing. One test of the powerfulness of a theory is how much related and expanding research it stimulates. The answer on this score must also be on the negative side. And on the empirical side, some investigators have shown that Sheldon's three primary kinds of somatotype can be accounted for on the basis of two variables, not three [27], and that, moreover, the somatotype is, in fact, variable in the face of various environmental factors [28]. Thus, despite Sheldon's arduous labors and his impressive methodology and statistical findings, his general proposition, that it is possible to predict personality structure (in this case, persistent temperamental characteristics) from an invariant kind of somatotype, has not been sustained.

JUNG'S INTROVERSION-EXTRAVERSION   Still another typologist, although he himself would probably disclaim this categorization of his personality theory, is C. G. Jung, who is most popularly known for his exposition of *introversion* and *extraversion*. The fact is that Jung has contributed far more significant concepts to the field of personality theory than his exposition of the introversion-extraversion problem, but we shall confine our remarks to this aspect of personality structure as he views it. Jung also accepts the concept of the personal unconscious, as does Freud, but he conceives of another "structure," the *collective unconscious,* as having great importance for the functioning of the personality. He also discussed other aspects of the personality structure, which we shall not detail here [29]. But for all of these he considers the various structures or factors in the personality as dynamically interacting systems.

Returning, now, to the concepts of introversion and extraversion, these are posited as two opposing attitudinal orientations to the world, the first of which involves orientation of the person toward his inner, subjective world and which is attended by social shyness and preferences for being by oneself, while the second involves orientation of the person toward the outer, objective world and is manifested by a tendency toward gregariousness, with an "open and ready disposition, at ease in any given situation." These temperamental attitudes are thought to be inborn characteristics and can be observed from birth on.

People can be typed as being either introverts or extraverts. Moreover, these basic orientational qualities are highly significant in all interpersonal relationships, determining such things as the type of occupation one finds congenial, the kinds of companions one selects, and even one's basic philosophy of life. Jung presented both clinical and various kinds of empirical evidence to support his contentions.

But unlike typologists who conceive of people as belonging in one category or another and who possess all or none of a given characteristic, Jung believed introversion and extraversion were matters of degree and that *both* orientational attitudes were present in every human being. Further, he believed that both orientations were necessary for effective living, since they complement each other. A given individual, then, has a certain degree of, let us say, introversion in his makeup, which is the predominant characteristic. He also has the counterpart of extraversion, which is then subordinate. As he develops and *consciously* strengthens his predominant characteristic, the greater is the *unconscious* development of the opposing orientation. The unconscious attitude thus remains undifferentiated, that is, it grows in strength but does not mature and enter into a reciprocal and interacting pattern in the individual's total adjustment. Jung cautions against the one-sided development of the naturally predominant attitudinal orientation; for, when this happens, some form of psychopathology or maladjustment is likely to occur, and psychotherapy, in some form, becomes essential for restoring some degree of harmony to the personality.[3]

Research with introversion-extraversion in relatively recent years has shown that this characteristic of the personality is probably a multifaceted phenomenon, for factor analysis of tests purportedly measuring it indicate that, for example, social introversion and cognitive or "thinking" introversion are relatively independent features of the personality [30 and 31]. Research findings support Jung's contention that people differ in degree of introversion-extraversion; in fact, the distribution is close to that of the normal probability function [32]. Some writers on personality theory and structure have taken this kind of finding to be a disproof of Jung's position, but the error is not

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[3] Eysenck has devoted a number of years to factorial studies of personality and has concluded that extraversion-introversion is one of the three primary dimensions of the personality [30].

Jung's. Jung simply maintained that some people (normal or pathological) were on the extremes in this characteristic (which is consistent with the evidence) and *not* that there were two modes in the distribution or that most people clustered at either extreme.

Field Theory and Personality Structure

A theory which is unique in conceptualizing the nature of psychological organization is that proposed by Kurt Lewin [33]. Unlike other theorists who tackled this task, Lewin attempted to conceptualize the structure of personality in relationship to the forces impinging upon man from the outside world and upon which he, in turn, impinged. He was interested, as were other dynamically oriented psychologists, in conceptualizing the internal structure of man's personality, but he believed that it was impossible to evaluate this structure properly without *simultaneously* considering the "facts," as he called them, of the psychological and physical worlds. Hence he termed his theory a "field theory," in which the field was defined as both the person and the environment. As we shall see, Lewin conceived of personality structure not as a fixed, static, and immutable organization of traits or habits but rather as a contemporary field of dynamically interacting forces which was constantly in a state of flux. In this respect he departed radically from those psychologists, and from that philosophical viewpoint, conceiving of man in mechanical or machine-like terms. For Lewin, man was not an *object* whose behavior was to be predicted entirely in terms of stimuli applied to it. Lewin also differed from Freud in at least two respects: (1) he viewed man as changing continuously and interacting with his environment, and (2) he attempted to understand man's behavior in terms of factors operating within and upon him *contemporaneously*. His orientation may be seen as a revolt against the mechanistic conception of man, on the one hand, and, as we shall learn, as a protest against those theories which made difficult the empirical testing of derivatives of the theories.

Lewin proposed, first of all, that the nature of psychological reality could be depicted in terms of mathematics and physics. He attempted to represent the nature of ever changing or

dynamic structure. He frequently used spatial representations of the forces that were operating in the person to produce behavior, and he termed his spatial representation *hodological,* in order to indicate that it was concerned with *paths of influence* of the forces. Theoretically, the person was conceived as operating, at every moment in time, within a *life-space.* The life-space, in turn, was conceived as operating within a *physical world,* described by Lewin as "the foreign hull of the life space." The accompanying simplified diagram represents the rudiments of this conceptualization. (See Figure 5.3.) Usually, the person is
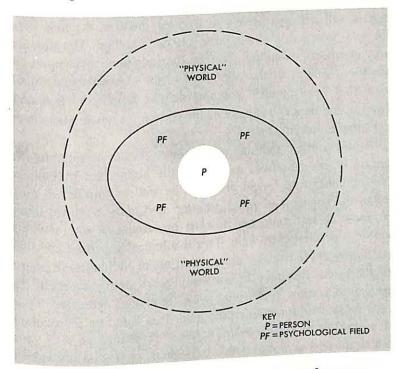
FIGURE 5.3 *Lewin's basic conceptualization of the person in his life-space.* P = *person;* PF = *psychological field.*

represented as a circle (*P*), and the life-space consists of the person and the *psychological field* (*PF*) within which this person is enclosed (*P* and *PF*). The person has his own circle, and the life-space has its own boundary, represented by the perimeter of the ellipse. Note that not only is the person enclosed by the ellipse but that no part of the boundary of the person touches the boundary of the ellipse. The boundaries of both the person and the life-space are conceived of as permeable, meaning that there can be lesser or greater degrees of

influence or interaction between life-space and person and between the physical world and the life-space. This diagrammatic representation of the person-in-the-world may suggest that personality can only be understood, in terms of this system, as that behavior which emerges, at a given moment, as a result of the complex interplay of forces from the individual, his life-space, and the physical world. According to Lewin's theory, it would be inaccurate to conceive of a person as having this or that amount of aggression or any other trait. Rather, his manifest personality is *always* the interplay of the fields of forces operating within and upon him. Whether a particular person will act aggressively in a given situation depends upon the total interaction of the person in the situation. The situation acts upon the individual, just as the individual acts upon the situation. This is in sharp contrast to the classical behaviorist's view that the organism contains definite behavioral potentials from which the environment elicits certain responses (the classical stimulus-response view).

Before further defining the nature of the person and the nature of the situation, as well as the boundaries of each, as conceptualized by Lewin, it would be well to consider in more detail the concepts of *force, valence,* and *tension.* Lewin thinks of *force* as any tendency toward movement of an individual within a psychological field. This is a logical construct and does not imply any particular assumption about the nature or source of the forces that may be involved. More simply stated, it is a conceptualization concerning what motivates behavior. Force only exists as a function of the field. It is based on the relations of organism to environment. *Valence* is defined as ". . . that which attracts or repulses this individual." A region has valence when it is within the life-space of the individual and arouses some force. *Tension* is understood as a condition of the inner-personal region (i.e., the inner forces) and is related to the particular activity which generates it. As an additional assumption, Lewin believed that tension always tends to become equalized in terms of surrounding or adjacent regions of the life-space. That is, there is a tendency for tension reduction through a process of equalization. Sometimes, as tension is reduced in one region, it may rise in another region, but the whole system works toward the establishment of a state of equilibrium. When tension arises, pressure is exerted against the boundary of the region in which it occurs and, depending upon the nature of the

SITUATION A. TOY IN WIRE CAGE

SITUATION B. TOY EASILY ACCESSIBLE
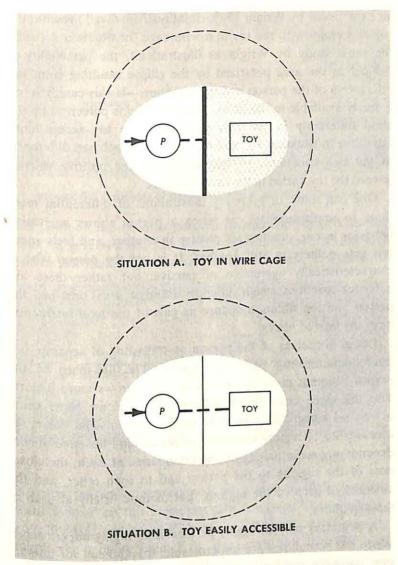
FIGURE 5.4 *Two different interactions between a person,*
P, *and his life-space.*

boundary (see below), will flow into adjacent systems of re-
gions easily, or with difficulty, or not at all.

Now, to return to the conception of the interactions of the
person with his life-space as the structural definition of person-
ality, consider the diagrams in Figure 5.4. As the situation
varies, the person reacts differently in interaction with it; i.e.,
his personality is different. In situation *1* the personality is
defined as the area of the ellipse which is polarized by the
interaction of the person (*P*) with the situation (*1*). Thus, in

an experiment by Wright [34], situation *1* involved presenting a toy to a child, with the toy in a wire cage. In situation *2* (using the same study by Wright as illustration), the personality is defined as the area polarized by the ellipse resulting from the interaction of the person and this situation—in this case, the toy is freely available to the child. The same toy is perceived by the child differently in the two situations (the toy seems more attractive in situation *1*), and the same child behaves differently in the two situations. In this illustration the *positive* valence toward the toy varied in the two situations.

One can think of everyday illustrations of differential reactions to unpleasantness, as when a person shows aggressive behavior in one situation, is passive in another, and feels angry but acts politely in still another. It is not the person who is characteristically aggressive or passive, but rather these are behavior reactions which differ in different situations; i.e., the person and the situation change as part of the *total interaction* or of the *field of forces*.

Lewin conceives of the person as consisting of separate but intercommunicating parts or regions. The life-space of the person becomes more differentiated as he grows more mature. The life-space consists of differentiated regions, some being more and some less accessible to the person. The degree of accessibility of regions between the person and his environment depends upon the nature of the boundaries of each, the closeness of the regions to the person and to each other, and the valences of each of the regions. Let us look briefly at each of these qualities.

A boundary may be highly permeable or highly impermeable. When the boundaries are impermeable, it is difficult for interactions between regions to occur; i.e., there is resistance. When two regions are adjacent, interactions are more likely to occur than when they are more distant from each other. Certain regions may be more *fluid* (or less *rigid*) than others, that is, they may be more susceptible to change. These are among the most important characteristics which determine the nature of the interactions which occur at any given moment. We say "at any given moment" because the characteristics of each region are themselves capable of change as the person and the situation change.

Let us consider now how the field of forces affects the personality reaction of the person. In Figure 5.5 the person's
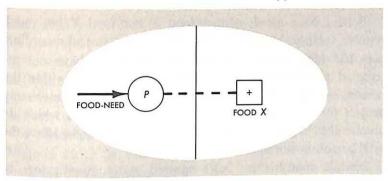
FIGURE 5.5   *Effects of field forces on a person's reactions.*

need for food has been heightened because he has had nothing to eat for several days. The food, in this case food *X*, has high positive valence for him because his need is high. In Figure 5.6
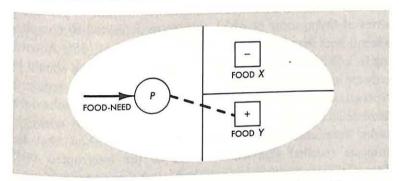
FIGURE 5.6   *Effects of field forces on a person's reactions.*

this same person is represented as having a high aversion toward food *X* on this particular day (suppose he is Catholic, this is Friday, and food *X* is meat), although he is equally hungry; yet because food *Y* is also available, this has high positive valence for him, while food *X* now has negative valence. In Figure 5.7, when the person's immediate needs for
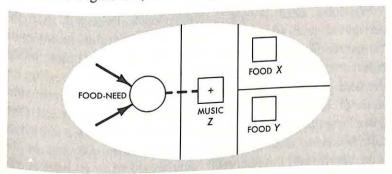
FIGURE 5.7   *Effects of field forces on a person's reactions.*

food have been sated, neither food X nor food Y has much positive valence, but stimulus Z, let us say a musical recording, now has high positive valence. Of course, we have not attempted to represent the interactions taking place within the person in these illustrations, but it might be an interesting project for the student to work out some examples which do involve the "regions" within the person as they might affect the total person-in-situation reaction.

Lewin's contributions have spurred many investigators to attempt to carry out experimental tests of his theoretical formulations, as Lewin himself did. Several illustrations of these experimental studies, briefly cited, may demonstrate the kind of impact he has had upon the development of personality theory. Two studies were aimed at demonstrating the phenomenon of tension level. In 1927 Zeigarnik asked her subjects to perform a series of tasks, some of which they were permitted to complete while others they were not permitted to complete [35]. According to Lewin's theory, the tension aroused by the task should be reduced only when the task is completed (the goal region is reached in the life-space). This would mean that behavioral tendencies toward the tasks would remain active only when the tasks were unfinished. Zeigarnik was able to show that her subjects recalled significantly more of the interrupted tasks (especially on memory tasks) than of the uninterrupted tasks (the so-called "Zeigarnik effect"). Ovsiankina interrupted her subjects in activities which they had been given; then she left the room and observed them through a one-way screen when they were left to themselves [36]. Many of the children continued with the interrupted activities once she had gone. These studies indicate that, when a tension has been created, the need persists and the increased tension has demonstrable effects until the tension is reduced.

We have cited Wright's study, which indicated that the perceptual and affective response to a stimulus varies with the nature of the barriers that are present. That the nature of the differentiation within the person has an important bearing on the field properties of a task was illustrated in the experimental work of Köpke [33]. It had already been demonstrated that, when subjects are interrupted in a task but are given a substitute task following this, the more similar the new task was to the interrupted task, the less need there would be to go back to the interrupted task. Köpke applied this finding to an experiment

with mentally retarded children. They nearly always went back to the interrupted task even when they were given a nearly identical substitute task afterwards. This was interpreted as showing that mentally retarded children in contrast with normal children have less-differentiated personalities and more rigid boundaries between cells.

A series of studies was performed by Lewin, Lippitt, and White in which the same children were exposed to three different atmospheres in small social clubs: *an authoritarian atmosphere,* in which the leader was highly dominant and authoritarian; *a democratic atmosphere,* in which policies were a matter of group discussion and decision; and *a laissez-faire atmosphere,* in which the leader had no leadership functions and complete freedom was allowed both individuals and the group [37]. The autocratic group was found to show increased aggressiveness and evidenced increased disruptive behavior either within the group or outside. The laissez-faire group also produced disruptive behavior but of a different type. The democratic group learned to engage in more constructive and productive behavior. Thus the climate of the group was shown to have important valence for the personality reactions of the individuals, although there were important individual differences.

AN EVALUATION OF LEWIN'S CONTRIBUTIONS Lewin's formulations have been criticized on several counts. One made by theorists who view behavior over long periods of time is that Lewin fails to take adequately into account the past history of the individual and the tendencies toward certain kinds of behavior which this history makes probable. Although Lewin did engage in longitudinal studies, these usually covered only short periods in the life of the individual. His theory, therefore, can still be called "cross-sectional." Lewin took for his unit of analysis one moment in time and tried to study the dynamic forces operating upon the individual *at that moment.* He believed that, if the forces of the life-space could be known at any moment, behavior could be predicted and it would not matter how the forces came to exist. The opposing view—that one must know the past development and experiences of the individual in order to predict behavior—is called the "longitudinal approach," because it holds that one must view the individual in temporal perspective. One great difficulty for Lewin's theory is that he failed to formulate any principles, let alone explicit laws,

to explain why the life-space and its regions develop in particular ways.

Perhaps the most telling criticism of Lewin's theories is that they fail to explain how the perceived environment exerts an influence upon the person in his life-space. Lewin does offer explanations *after the fact,* but he does not indicate what independent variables must operate to produce behavior. In fact, some critics of Lewin argue that he falls into "the trap of subjectivism," since he fails to specify the variables in the life-space which are influenced by independent variables in the environment.

It has also been suggested that Lewin has really failed to specify in any precise way the origin or the nature of the concepts he employs, such as valence and tension. This criticism is related to the point previously made, since in neither case is there a clear developmental treatment of how the person-in-the-life-space came to the point at which he is being studied.

Perhaps the critics are asking more of Lewin than he himself intended to do and are ignoring the fact that he died before completing his theory. It cannot be denied that Lewin exerted a tremendous influence on the field of personality theory and upon the many psychologists who designed hosts of ingenious experiments to test out the theory and its implications. He certainly supplied a needed corrective to the viewpoint that all of personality exists "within the individual" and insisted that the importance of the perceived environment should not be ignored. One of his greatest contributions (as part of the "external world" that influenced the life-space of all psychologists) was, and still is, his catalytic effect upon social psychology, in general, and upon group dynamics, in particular [38].
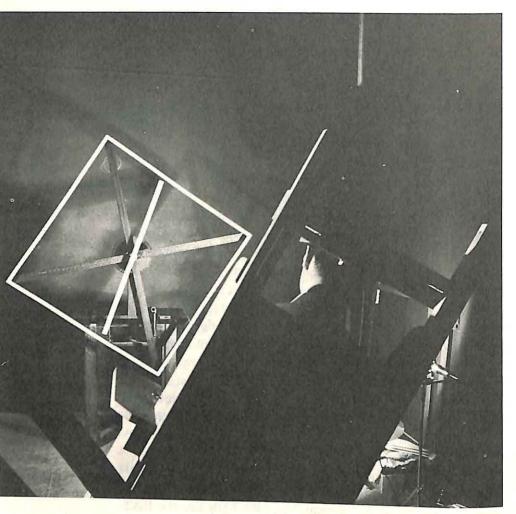
"Recently Discovered" Personality Dimensions

FIELD-DEPENDENCE In a recent book, Witkin and his co-workers summarized their own work, and the work of others, on conceptualization of what Witkin originally termed "field-dependence and field-independence" [39]. He suggested that people could be distinguished by the degree to which they were perceptually field-dependent, i.e., passively dependent in their orientation, or contrariwise were field-independent, i.e., actively and analytically oriented toward the world. The latter terms

have been replaced more recently with such terms as "differentiated" and "articulated," while the former have been replaced with "global." The "articulated" style of perception characterizes the more mature person, who is less dependent upon external cues in his perceptual judgments. It also seems to characterize a different kind of personality adaptation; for example, it has been found that male alcoholics tend to be more global or field-dependent than male nonalcoholics [40]. The type of perceptual style which a person employs remains relatively consistent over years, although with maturation there is a general tendency to become articulated rather than global. Because measures of the perceptual style are significantly correlated with personality characteristics and with various kinds of ability and social influence and also show a consistency over time, they are thought to tap an important dimension of the personality.

A clearer conception of the nature of the perceptual phenomena may be gained by a study of the devices used to measure them and by an analysis of some of the findings that have been reported. One of the tests used to measure field-independence is the Rod and Frame Test (RFT). The subject is seated in a dark room. He faces an illuminated frame and a rod. His task is to adjust the rod to a true vertical position while the frame is tilted, starting from a condition in which both frame and rod are tilted. In another test, the Body Adjustment Test (BAT), the subject is seated in a tilted chair in a room which is also tilted. His task is to adjust his chair to a true vertical position. The Room Adjustment Test (RAT) is like the BAT, but this time the subject must adjust the room to a true upright position. These tests require elaborate apparatus. Consequently, Witkin and his colleagues developed a simpler testing procedure, in which the subject is simply required to find a figure that is encompassed by a larger and more complex figure, that is to say, a figure that is embedded within another figure (EFT). In a series of studies it was found that RAT did not correlate very well with the other three tests, whereas these other three tests had moderate to substantial intercorrelations. Therefore, in developing a "perceptual index" which measured the relative degree of field dependence, the RAT was excluded.

Witkin has shown [41], as have others, that perceptual style as measured by his index is related to the nature of early life-experiences. It has been shown that perceptual style is clearly

Witkin's Rod-and-Frame Test. David Linton

related to sexual roles [42]. Field-dependent subjects have less well differentiated concepts about themselves and their bodies. They tend to be more suggestible. They tend to use more primitive or immature defense mechanisms, like denial and repression.

The perceptual index is also similar to Thurstone's "flexibility of closure" [43] and to other related perceptual measures. The types of personal adaptation made by people with the characteristics of the field-dependent subject are different from those made by people who are not field-dependent; and they seem to be characterized by what is commonly regarded as less mature social behavior.

RESPONSE STYLES There is a general tendency for people to agree with statements or to accept situations which are vague or indefinite [44]. However, people do differ in this tendency to agree, and studies provided by clinical evaluation or treatment as well as experimental studies seem to confirm the conclusion that those who have this tendency to a high degree are more suggestible, are more field-dependent, and, when psychopathological, tend toward hysterical patterns of personality adaptation (see Chapter 6). Recent studies have shown that, while these characteristics may be present, the agreers have personalities that are more complex than these generalizations would suggest. They seem to be anxious to "please" and hence "agree" but at the same time are "internally" in conflict with this need and see themselves as stubborn, willful, hostile, and competitive [45]. Thus a clinical study by Couch and Keniston revealed that agreers were internally hostile, felt a lack of ego-control, and were otherwise in conflict [46], although to the outside observer they seemed co-operative, respectful, and submissive.

In recent years a great deal of research has been devoted to response styles that have to do with cognitive controls. It would take us too far afield to review these studies in detail, but it may suffice to indicate that most workers conceive of these response styles in terms of the newer *ego psychology* stemming from psychoanalytic theory. In ego psychology, response styles in thinking, remembering, and perceiving are seen as developing out of a relatively conflict-free area of development. These cognitive controls are conceived of as regulatory mechanisms and have been related to general mechanisms of adaptation and adjustment. For example, one principle of cognitive control involves the variable known as *leveling and sharpening*. As the term suggests, this has to do with the degree of differentiation the subject makes in studies involving memory traces. Holzman and Gardner found [47] that subjects who were high in leveling tended to be high in the mechanism of repression. Gardner made a factorial analysis of six measures of cognitive control, using both male and female subjects [11]. This study and related experimental findings suggest that cognitive style may be of very great importance in relation to both methods of coping with problems (see Chapter 4) and defense mechanisms. That response styles, in general, and cognitive controls, in particular, may be linked with cultural practices is indicated by the finding that males differ significantly from females in these patterns of

behavior and that cultural differences have been found to correlate with such styles.

SOCIAL DESIRABILITY One of the problems that has confounded a great deal of personality research utilizing paper-and-pencil tests of personality (see Chapter 8) is the tendency for the subject to respond in such a manner as to appear "socially desirable" [48]. Most subjects tend to answer items so that their responses agree with what social consensus would indicate is a *desirable* response. Much of the recent work in this area was influenced by the reported findings of Edwards, who developed a Social Desirability Scale [49]. As we noted earlier, subjects tend to agree with items when their content is vague. They also tend to agree when the content indicates a socially desirable quality or an absence of obvious pathology, although the latter is not always the case, for some subjects try to "paint themselves" as "sicker" than they really are [50]. Psychologists must be concerned with social desirability, since it might contaminate the validity of personality tests. Messick found that when he analyzed Edwards' Personal Preference Scale, a large portion of the variance in test scores could be accounted for in terms of a tendency to respond in the stereotype of the "achievement-oriented middle class" [51]. The fact is that the tendency to appear "socially desirable" may itself be significantly related to personality makeup; and rather than attempt to get rid of it in personality tests, psychologists are now trying to utilize and control it in such measurements.

The Self as a Personality Attribute

One of the perennial questions asked by philosophers is "Who am I?" All of us have asked ourselves this question many times; and sometimes we feel that we really know who we are, but at other times we may be confused about ourselves. When we think that we know ourselves best, we are sometimes shocked to discover that others don't agree with our self-perceptions. And, sometimes, we learn suddenly that there is something about ourselves that we had never thought was "there," as when we find ourselves giving in to a fit of anger, or when we begin to cry or feel depressed and had no inkling that we were going to feel that way. In psychotherapy, too, the patient frequently finds

that there are aspects and levels of the self that he was unaware of or had distorted in some way.

THE SELF: MEANING AND DEVELOPMENT In psychology the study of the self-concept has received considerable emphasis, particularly in recent years, but no conceptual definition of the "self" has been universally accepted. Carl Rogers, who has been studying the development of the self-concept for many years, utilizing the data derived from counseling people by means of the *client-centered approach* (see Chapter 7), offers the following definition: "[It is the] . . . organized, consistent conceptual gestalt composed of perceptions of the characteristics of the 'I' or 'me' and the perceptions of the relations of the 'I' or 'me' to others and to various aspects of life, together with the values attached to these perceptions . . ." [52]. This is an attempt to define the self in terms of the individual's perceptions of himself as well as his perceptions of his interpersonal relationships and his relationships with the world. We notice that it emphasizes two characteristics of the self: the person's awareness of himself as *he* sees himself and *his* awareness of his relationships with people and situations. We may also notice that, although he speaks of *perceptions,* the self is defined as a *conceptual* Gestalt. Since an individual does not have any *concept* of himself in infancy, and since his concept of himself is founded upon *perceptions* of himself, it would be well to trace briefly how this conceptualization develops.

But before we do so, we might note other characteristics of the self-concept which have been proposed. The self may be defined not only in terms of the person's self-awareness and his awareness of interpersonal events, but it may also encompass other aspects or dimensions. Some writers speak of the *core* of the self as distinguished from the *phenomenological* aspects of the self. In such analyses, the emphasis is upon *different levels* of the self-concept. Individuals differ in how readily, if at all, they can become aware of deeper (or more unconscious) levels of the self. Other writers emphasize the self as *an agent* and prefer to define the self in terms of the social roles that the person employs. Thus, Snygg and Combs believe that the self-concept consists of those ". . . parts of the phenomenal field which the individual has differentiated as definite and fairly stable characteristics of himself" [53]. Still another position with respect to the self-concept has to do with the emphasis

placed upon *bodily feelings.* To such people an important characteristic of the self is that which is projected onto one's feelings about one's body, i.e., whether one sees oneself as good-looking, strong, healthy, virile, and so on. And another dimension of the self-concept embraces the dual perceptions of the self as it *actually* is and the self as one *would like it to be.* Symonds speaks of these dimensions as "the self as conceived" and "the self to be realized" [54]. Miller refers to the *actual self* and the *potential self* [55]. Sometimes workers in this field also utilize the dimension of the *ideal self,* to represent the conception that the person reports or feels he would like to be. As we shall see, research on the self often makes use of discrepancies between two or more of these three aspects of the self.

Now we can turn our attention to the development of the self. Before we can have any perception concerning ourselves, we must be able to distinguish ourselves from others. In other words, we must be able to distinguish the "me" from the "not-me." Perceptions of this kind first develop during infancy in an amorphous way as the baby begins to become aware of sensations in his body, but they become somewhat more focused, especially in the second year of life, when the child is able to distinguish the external source of pleasurable or painful stimulation, i.e., when he is able to perceive that "someone out there" who is "not me" is doing something which causes him to experience pleasure or pain. The original locus of the self is thus usually conceived of as somewhere in the body, since this is the referent the child must use in becoming perceptually aware of the internal and the external sources of stimulation as well as the experiences of pain and pleasure [56]. The baby is also able to begin to perceive that, while he is the source of some actions, others are the sources of other actions. We traced in Chapter 3 the conceptions advanced by Erikson to account for the development of a basic attitudinal orientation toward the world. Part of this orientation involves the beginning perceptions of the self as something one can rely upon—as a "feeling" that one can, in favorable circumstances, rely upon oneself with some degree of confidence. Many of these early perceptions are referred to the body, and so it is believed that bodily feelings become the "core" of the early self-percepts. As bodily controls become more efficient, the child learns to master his physical world, and these successful actions mark an extension of the boundaries of the self. Likewise, as the child learns to "deal

actively with" the significant people in his life, his sense of self develops, is extended, and becomes more important as a factor guiding his interpersonal behavior.

It is doubtful that these early perceptions of the self are at all well integrated. Rather, the child seems to have many, and sometimes contradictory, perceptions of himself. Only in time are these differing perceptions integrated into self-concepts. The child, even the adult, may have a number of nuclei of self-concepts, so that he senses himself as adept in social situations but feels inadequate in other situations in which he must deal with an authority figure; he feels at ease with men but feels uncomfortable with women; he feels superior in physical activities but feels inferior in intellectual pursuits; and so on. A moment's introspection will reveal that, in most cases, we have self-concepts about ourselves that differ with respect to situation and with respect to time.

We should emphasize that many of our self-perceptions represent distortions of the "objective reality." This is probably true not only because of the vagaries of the self-concept, in general, but because unconscious factors modify the accuracy of our self-perceptions. The way we "feel" about our stature or our physical appearance, for example, colors the perceptions we have about these aspects of our bodies. We may see ourselves as "plain" or even as "ugly," not necessarily because of the realities of our appearance but because of our need to avoid feeling beautiful or handsome—in other words, as a defense against conflicts of which we are only dimly aware or are entirely unaware. Cultural attitudes may markedly reinforce such distortions or even induce them, but unconscious factors are likely to play a more significant role. A brief excerpt from a case study may help to illustrate the role of the unconscious factors in producing such distortions in the self-perception.

An adolescent girl was seen in clinical consultation by one of the writers because she was quite depressed, anxious, and unable to concentrate in her schoolwork. She believed that she was quite ugly and that boys were not interested in her as a consequence, and she attributed her emotional difficulties to these factors. Her self-perceptions as "ugly" rested, she thought, on the presence of a mole on one of her cheeks. As a matter of fact, she had been trying, without success, to induce her family doctor to remove the mole surgically. As seen by both her peers and elders, she was a quite beautiful girl, and, if anything, the small mole enhanced her beauty and gave her face even greater charm. On

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the basis of clinical study, it soon became apparent that she had severe conflicts over her sexual impulses and had considerable guilt. Actually, it was her sexual wishes and fantasies which were "ugly." Her self-perception as "ugly" gave her a pretext for believing that boys could not be attracted to her and thus enabled her to rationalize her own fear of social contact with them.

The development of language also plays an important part in the development of the self-concept. The child begins to refer to himself as "me," not only when his development is sufficiently sophisticated to enable him to distinguish the "not-me" from the "me," but when his language concepts are extensive enough to designate others by their appropriate pronoun designations (such as "he," "them," and the like) (see [57]). Language symbols form the basis of many kinds of primary conceptualizations about the self, such as being "happy," feeling "sad," and, much later, being "assertive" or being "compliant." Discrete views of the self are conceived in terms of language and are facilitated by them.

A continuing feature of the development of the self-concept is the ability to conceive of oneself as having continuity over time. We, as adults, may take for granted this feeling of continuity in our self-concept and usually have no difficulty in recognizing that we are the same person we were some years ago, despite differences due to developmental factors and learning experiences. Under severe emotional stress, we sometimes may doubt this continuity. Persons suffering from memory loss, as in amnesia (see Chapter 6), temporarily lose this capacity for continuity in the self-concept and feel and act as if they are different persons. There are other types of psychological and organic disturbance which may produce a disruption in the sense of one's self-continuity. The perception of continuity in time of the self-concept is indicative of an extension of the *self-boundaries* and indicates that one has formed some stable components in the self-concept that are not disrupted by changing circumstances or are only transiently disrupted by changes in mood or by illness. The person who is "me" has developed a stable identity.

MEASUREMENT OF THE SELF-CONCEPT Perhaps one of the simplest ways to measure perceptions or conceptions of the self is by means of *self-ratings*. The subject is given a questionnaire

in which he is asked to rate himself on various aspects of the self. In this respect the method is similar to many types of personality questionnaires (see Chapter 8). The self-rating questionnaire may consist of a single dimension of the self-concept, with many examples of behavior on which the subject is asked to rate himself, or it may consist of a number of subscales, so that different aspects of the self may be assessed. Studies have shown that there is a relationship between scores on such self-ratings and adequacy of adjustment. In many cases investigators have obtained *discrepancy scores* by having the subject rate not only himself but also his ideal self or the characteristics of some other well-defined group. Again, it has been demonstrated that, in general, larger discrepancies are associated with greater degrees of maladjustment. In studies of the effects of psychotherapy, it has been found that as individuals improve in their adjustment their self-ratings improve [58], their perceptions of others become more favorable [59], and their discrepancy scores become smaller [60]. In fact, Rogers, who has done and stimulated so much research in this area, believes that changes in the direction of a more favorable self-concept produce changes in adjustive behavior [52].

However, there are difficulties in the use of self-ratings. In the first place, some individuals may tend to distort their self-ratings in order to present a more favorable picture of themselves to themselves and to others. We commented previously on the influence of response set and social desirability as factors influencing such ratings. Some kinds of people are particularly likely to present a false picture of themselves [61]. In the second place, the results on self-ratings depend significantly upon the "situational climate" in which they are obtained and may change as a result of concurrent events in the life of the subject [62]. And, finally, large discrepancies between self-ratings and ratings of "others" do not necessarily reflect poor adjustment. For example, Havener and Izard found that some psychotics showed no greater discrepancy scores than normals [63]. They believed that the reason for this was that these psychotics were less accepting of others than were normals, and thus the relative discrepancy scores for the two groups were about comparable.

A refinement of the self-rating techniques involves the method known as the *Q-sort* [64]. In this procedure the subject is given a series of statements on which he is asked to evaluate himself, but, instead of being asked simply to state that a given

statement is true or false (or assign it a simple scale value), he is asked to distribute the statements in several piles. (He is usually given each statement on a separate slip of paper or a card.) Thus, he may be asked to distribute the statements so that pile A, which applies to statements which characterize him *least,* contains only 2 statements, pile B, which applies to statements which characterize him slightly better, contains 5 statements, and so on through piles D and E, each of which contains 18 statements, up to pile H, which applies to statements which characterize him *most* and contains 2 statements. He is forced to distribute his statements according to a normal probability distribution, and each statement can then be given a score depending upon the pile in which it was placed. This technique has certain statistical advantages over the usual self-rating questionnaire, but from the viewpoint of validity it has some of the same problems that all self-ratings have.

By contrast with these two methods, there are approaches which attempt to secure more innerdetermined measures of the self-concept, that is, to utilize methods in which the individual's own frame of reference is explored. For example, George Kelly has developed a Repertory Test, in which the subject is asked to select the names of people he knows or has known who "suggest to you some people you know" who fit each of twenty-four "roles" printed on 24 cards [65]. Thus, card 1 is "A teacher you liked," card 2 is "A teacher you disliked," card 5 is "Your mother," card 12 is "A neighbor with whom you get along well," and card 16 is "A boy you did not like when you were in high school." No name may be listed more than once. The subject is then presented with the cards, three at a time (in various combinations) and is asked to tell in what important way two of them are alike but are different from the third. In this way the nature of the personal constructs, in terms of the characteristics the subject sees as relevant, are determined. Kelly suggests other procedures for eliciting additional analysis of the role constructs that are *significant for the individual subject*. This approach is essentially clinical in its orientation, though the test may be administered in group as well as individual form. Other approaches utilizing a clinical approach make use of projective tests, detailed interviews, and recordings of observed behavior. Clinical approaches have the advantage of defining the self from the inside view of the person as he experiences himself, consciously or unconsciously, but they may

have the disadvantage, common to many clinical approaches, that the results are difficult to handle statistically.

SOME ADDITIONAL RESEARCH FINDINGS ON THE SELF As we stated, there has been considerable research on the self in recent years. Some of the findings are of particular interest to us. We noted, in a previous section, some of the aspects or dimensions of the self that various writers have distinguished. Most of these conceptions were founded upon empirical findings from clinical or research studies. Recent attempts to factor-analyze the dimensions of the self have, in general, supported these conceptions. An extension of the meaning of the self-concept, as it operates at the adult level, was provided by a factor analysis done by Smith, who found five clusters in the self-concept: body image, self-esteem, anxiety-tension, independence, and estrangement [66].

The relationship between the concepts of ego and self have also been explored. We will recall that the ego consists of that aspect of the personality which mediates internal drives and relates them to the external world. The newer ego psychology has postulated a sphere of conflict-free operations of the ego based, in part, on genetic and constitutional factors that develop as autonomous functions. Schactel has presented evidence to indicate that there are no conflict-free domains of the ego but that, instead, all behavior is influenced by conflict and that, as the ego learns to master conflict, feelings about the self are enhanced [67].

There is considerable evidence that there is a relationship between mood and changes in the self-concept, as shown in a study by Wessman, Ricks, and Tyl [68]. Moreover, the self-concept has been shown to improve in benevolent or favorable environments [58], whereas it tends to deteriorate in unfavorable environments [69]. During adolescence, the individual is typically subjected to considerable biological and psychological stress. Those individuals who already have positive self-concepts manifest more stability during this adjustmental phase than those with poorer self-concepts [70]. It has also been learned that persons who show greater consistency in their self-concepts over time are much more likely to be well adjusted than those who are inconsistent in this respect [60]. Corroborating research in this respect demonstrates that children who are more anxious tend to have poorer self-concepts than children

who are less anxious [71]. Finally, it is interesting to note not only that cultural factors significantly influence the formation of the self-concept, as in the study by Bieri and Lobeck [72] which indicates that Jews perceive themselves as critical and skeptical whereas Catholics see themselves as conforming and acquiescent, but that those who see themselves as more in control of their own fate tend to influence the culture in which they live more than those who see themselves as externally controlled. Thus, a study by Gore and Rotter [73] indicated that Negroes who feel less controlled by external factors are more inclined toward social action than other Negroes.

Present Status of Organizational Theories

No one theory of the structure of the personality is universally acceptable to psychologists. All theories are seen as only approximations to a conceptualization that is adequate for either understanding or predicting significant aspects of behavior. Some theories seem particularly useful in dealing with pathological behavior, whereas others appear to be more useful in dealing with normals. The interaction of the developments in clinical and experimental research are having a catalytic effect in improving our understanding of the nature of man and the nature of his personality structure.

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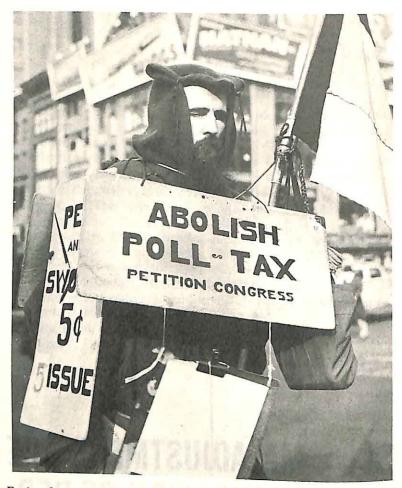
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SIX MALADJUSTMENT: THE DISORGANIZATION OF PER-SONALITY

We have previously considered some aspects of personality development, functioning, and organization. Our study of personality would be incomplete if we did not also discuss how the functioning of the personality becomes disorganized and how, under certain circumstances, this dysfunctioning may be mended. We shall devote the present chapter to the former problem, and the next chapter to the latter.

Disorganization in functioning of the personality, in moderate or in severe degree, is quite common. It has been estimated, for example, that more than one-half of all hospital beds in this

Rational protest or personality disorganization?

Scheier from Monkmeyer

country are occupied by patients who are suffering from some form of psychopathology [1]. Moreover, there is a large proportion of the general population that has some disruptive emotional disturbance that does not require hospitalization. It is not in jest that this has been called "The Age of Anxiety."

The great magnitude of the problem of personality disorganization constitutes an important reason for learning about it. However, there are other reasons for undertaking its study.

Knowledge of maldevelopment of personality function tells us something about the nature of normal function. When we attempt to repair an automobile engine that has broken down, we can learn a great deal about what makes such an engine work properly and, perhaps, how to build a better engine or one

that will break down less often. Moreover, the study of the malfunction of an engine—or an organism—gives us a better understanding of its parts. We shall learn, for example, that the defense mechanisms and aberrations shown by persons with severe personality disturbance are also present in normal persons; the differences between the abnormal and the normal may be differences in frequency of occurrence or in patterning of the various defense mechanisms. In any case, we are better able to understand defense mechanisms in the normal person after we have studied them in the abnormal. Then, again, knowledge of the relative contribution of genetic, biochemical, and learning factors in the development of severe mental disorders contributes to a better understanding of these factors in the less severely disordered and in the normal.

This chapter will first consider the frequency of occurrence of the major forms of personality disorder. Then we shall discuss the most severe forms of disorder as well as the less severe forms. Finally, we shall evaluate the nature of normal personality functioning.

Prevalence of Personality Disturbance

It is very difficult to assess the number or percentage of people with personality disturbances. First, there is the problem of defining such conditions. Next, there is the problem of measuring such conditions reliably. And then there is the extremely difficult problem of obtaining representative samples from the total population. As we shall see, definition and classification of personality disorders still leave much to be desired. Methods of evaluation have improved considerably during the past few decades, but the validity of even the improved modern methods is far from perfect. Further, present solutions to the sampling problem involve a number of important assumptions, since it has not been possible to subject a truly representative sample to adequate evaluation procedures. Estimates are therefore based on hospital admissions, referral to mental health agencies, and the like. Reasons for referral to psychiatric clinics vary with social conditions (for example, during unemployment or periods of economic depression, frequency of referral tends to go up), with the community (for example, referral to clinics and admissions to hospitals are relatively greater in urban than in rural

communities), and with community attitudes (for example, communities vary greatly in attitudes toward mental health problems and in availability of clinical facilities).
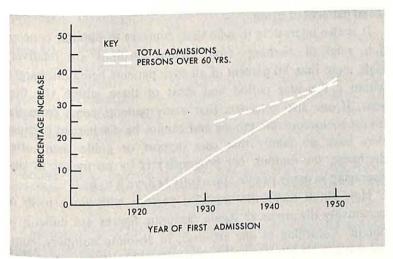
The most accurate data on this problem come from statistics on admissions to hospitals. Prior to 1947 such data were collated by the Bureau of the Census, but since then they have been gathered by the National Institute of Mental Health. Most states, of course, make available detailed analyses of their hospital populations, but methods of codifying such information vary considerably among the several states. In general, the data on admissions to mental hospitals for very serious mental disorders show a steady and rapid increase [2]. Between 1922, when such data became available for the entire country, and 1950, there was an increase of 48 percent, or from a rate of 68.2 per 100,000 of the population to 100.6. Yet we cannot conclude from these data alone that there has been a comparable rate of increase in the incidence of severe mental disorder in the general population. Rates of admission to mental hospitals depend on many variables, such as number of beds available, criteria for admission, the attitudes of the mental health professions, and the attitudes of society in general.

A study of the comparative data on admissions to hospitals in the various states is extremely interesting. These data show that such rates vary considerably, the northeastern states having rates that are well above the average and the southern states having rates that are well below the average. In fact, New York admits about three times as many patients to mental hospitals as does New Mexico or Mississippi. We do not know, however, that these rates reflect a real difference in incidence of mental illness, since the states are not at all comparable in the kinds of variables we noted above.

A more accurate assessment of the nature of this problem can be gleaned from data obtained within one state. Malzberg, who has devoted intensive and continuing attention to the problem of mental health statistics, has made an analysis of such data for the state of New York [3]. He has shown that for the period between 1920 and 1950 (controlling for both sex and age of patients who were admitted) there was an increase of *first admissions*[1] of 37 percent. He interprets his data as supporting the conclusion that ". . . there has been a corre-

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[1] "First admissions" refers to patients who are hospitalized for the first time in their lives.

sponding increase in the incidence of mental disease" in the population at large. We may dispute this conclusion on the grounds that rates of admissions are influenced not alone by incidence of illness but also by attitudes of society toward placement of people in mental hospitals, by availability of mental hospital facilities, and the like.

FIGURE 6.1 *Relative increase in first admissions for psychiatric disturbances in New York State. Based on findings in B. Malzberg. Important statistical data about mental illness. In S. Arieti (Ed.), American Handbook of Psychiatry, Vol. 1. New York: Basic Books, 1959.*

Several other findings from Malzberg's study are interesting. He shows that about 30 percent of all first admissions in New York are for the psychosis known as dementia praecox (or schizophrenia). This is by far the greatest single group. It is also noted that there has been a significant increase in admission of the aged; from 1930 to 1950, for example, the percentage of first admissions for persons over 60 years of age increased from about 23 percent to about 35 percent. See Figure 6.1 for a comparison of total first admissions with first admissions for persons over sixty years of age. There are important ethnic differences, as well. Negroes had about twice as many admissions as whites, but their admissions resulted from the conditions of *general paresis* (due to syphilitic infection) and *alcoholic psychosis*—conditions that are clearly related to social and economic factors. Jews, who had about average admission rates compared with the admission rates of the general popula-

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tion, had the lowest rate for alcoholic psychosis (close to zero), while the Irish had the highest rate for alcoholic psychosis and the lowest rate for general paresis. The conclusion that seems strongly supportable on the basis of this and related evidence is that the frequency and type of psychosis, at least for some forms of psychosis, is markedly influenced by social-environmental conditions, such as training in social controls, morality, and other social patterns of living.

It is also interesting to note that, contrary to popular conception, rates of discharge from mental hospitals are relatively high, more than 40 percent of all such patients being discharged within a five-year period and most of these within the first year. If one also considers that many patients come from the lowest socioeconomic groups and cannot be discharged because they have no family that can support or guide them after discharge, the outlook (or prognosis) is by no means as discouraging as many people apparently believe it to be.

How about noninstitutionalized persons with some form of personality disturbance? Again, accurate figures are difficult to obtain. According to one estimate, in absolute numbers, some ten millions of persons suffer from the milder forms of personality difficulties, such as *psychoneurosis* and *character disorder* [4]. Rennie made a survey in New York and concluded that about 30 percent of the population had some disturbing personality problems [5]. In what is probably the most thorough and comprehensive research to date, Dorothea Leighton and her colleagues made a ten-year study of an entire county (Stirling) and developed careful sampling and evaluative procedures as part of their research [6]. Table 6.1 presents the major findings on the prevalence of personality disturbance. The numbers in the table are based on representative samples of the area under study. It will be noted that from 11 to 17 percent are rated as "probably well" and from 25 to 43 percent are rated as "doubtful" in mental health, or better. These percentages are far lower than the usual estimates of good mental health in the general population. Excluding the most severe cases of psychiatric disorder, and including only Type II and Type III categories, where maximum information is available, it appears that 74 percent of the population shows at least minor forms of psychiatric disturbance. The percentage for only Type III cases is not much out of line with (although somewhat higher than) the results indicated in previous intensive studies of this kind.

TABLE 6.1. RATINGS OF NEED FOR PSYCHIATRIC ATTENTION

Typology of Need		Percentage Based on Maximum Information Available	Percentage Based on Medium Information Available
Type I:	Most abnormal	1%	3%
Type II:	Significant impairment	38%	17%
Type III:	Probable psychiatric disorder	36%	37%
Type IV:	Doubtful	14%	26%
Type V:	Probably well	11%	17%
Total number of respondents		140	1,010

SOURCE: D. C. Leighton *et al.*, *The Character of Danger: Psychiatric Symptoms in Selected Communities*, New York: Basic Books, 1963, p. 142.

Our sampling of the findings on prevalence of mental disturbances has clearly revealed the very great magnitude of the problem. Such findings have given great impetus to the study of preventive psychiatry as well as to the search for improved methods of treatment. It is certain that the problems of mental health are everyone's concern, since they touch almost all families, and that knowledge of the nature of these problems will assist in their solutions. Efforts are needed to attack these problems at many levels and in diverse ways.

The Major Psychoses

In attempting to convey a vivid idea of the nature of a particular form of *psychosis* (or insanity, as it is sometimes popularly called), Jung wrote in 1903, "Let the dreamer walk about and act as though he were awake and we have at once the clinical picture of dementia praecox" [7]. Dementia praecox is one form of psychosis and is commonly called schizophrenia today. The individual with this condition often acts as though he were in a dream state, and his speech and thinking processes seem similar in many respects to that of the dreamer. The lay person often expresses the same idea when he says, after observing a psy-

chotic person, "He has lost touch with reality," or "He just doesn't seem to be all there." Such characterizations are not necessarily true of all persons with schizophrenia or of all persons with any of the other forms of psychosis. In some psychoses there is little or no loss of reality awareness.
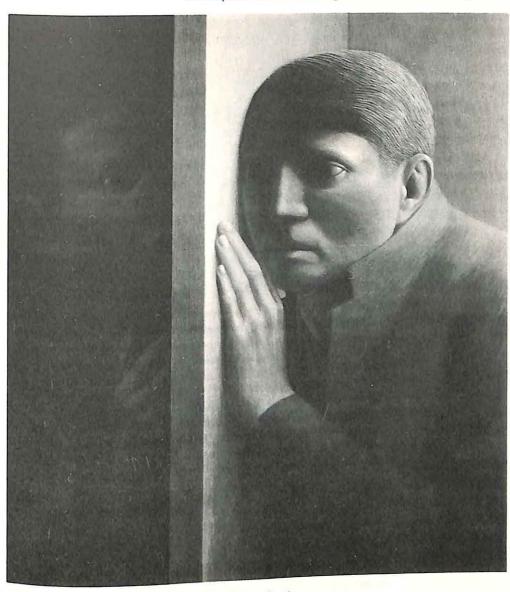
What, then, is a psychosis? Experts in the mental health field have not been able to agree on a definition that accounts for all psychotic conditions or that invariably permits differentiation of such conditions from psychoneurotic or normal behavior. From the clinical viewpoint, a psychosis may be thought of as a gross disturbance in behavior in which any or all of the following major classes of severe disturbance are present:

1. disorganization of the thinking processes
2. inappropriateness in the nature of, or extreme intensity of, emotional reactions, especially of general mood
3. severe distortion in the perception of self or environment
4. loss of control over impulses
5. disharmony between emotion and thought (e.g., the person tells of a tragic event in his life yet appears unconcerned or even happy)
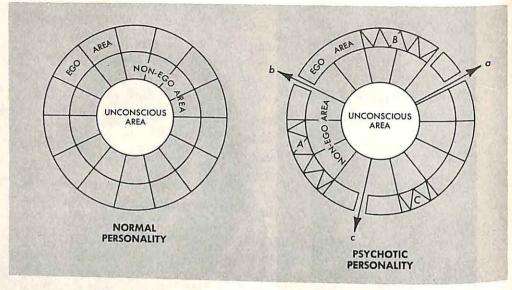
The question which arises is whether such disturbances in psychosis are different in degree or in quality from conditions in nonpsychotic states. No universally accepted answer to this question is available, since each alternative (degree or quality) is acceptable to significant numbers of workers in the mental health field [8]. It is also worth noting that, although a psychosis may be more disabling than a psychoneurosis, this is not invariably the case.

Nevertheless, we may think of psychoses as involving a more profound alteration of the personality than is the case in other conditions because there is a pervasive disruption of the personality even though the individual may still be able to maintain himself in society. The disruption represents a failure in *integrative adaptation* of the organism to internal conditions, or external conditions, or both. Thus, there may be a profound disturbance in perception (as in *hallucinations,* when the person experiences the presence of some external stimulation which is, in fact, not present), or in thinking (as in *delusions,* when the person has some belief that is not supported by available and quite apparent evidence), or in *interpersonal relations* (as in autism, when the person withdraws interest from the world and

'Voice' Painting by George Tooker. Private Collection.
Courtesy Durlacher Brothers, New York

tends to live within himself). There may also be profound alterations in the biochemical functioning so that food is refused, the output of urine is doubled, or liver function is severely disturbed [1]. At the psychological level, Hutt has suggested that psychosis involves a *fragmentation of the ego,* that is, that the many functions subsumed under the concept of ego do not work together smoothly and that some functions are markedly exaggerated whereas others are markedly inhibited [1].

FIGURE 6.2 *Schematic representation of the organization of the personality in normal and psychotic conditions. In the normal condition, on the left, the personality is well differentiated; there are many large subdivisions of the ego, and there is good articulation (communication among several areas). In the psychotic condition, at the right, there is less total ego area; some areas of the ego are poorly developed (represented by the cross hatching at A, B, and C). There are "breaks" in the ego (at a, b, and c) so that impulses can "break through" without intervention of ego functions, and there is less well developed articulation among the several areas of the personality.*

Figure 6.2 illustrates, schematically, normal and psychotic ego characteristics.

CLASSIFICATION OF THE PSYCHOSES The categorization of the functional psychoses which is most widely used in this country is that proposed by the American Psychiatric Association in 1952 [8]. In this classification, functional psychoses are seen as involving "personality disintegration for time, place, and/or person." There are four main subgroups of functional psychoses: *involutional psychotic reactions* (mainly depression occurring during the involutional period of life, providing no previous psychotic reactions have occurred); *affective reactions* (manic-depressive reactions and psychotic depressive reactions); *schizophrenic reactions* (including eight major subdivisions, which we shall discuss presently); and *paranoid reactions* (involving delusional behavior). As will be noted, this

scheme of classification is based on reaction patterns, i.e., behavioral manifestations. It is not based on presumptive underlying dynamics, although the classification is the result of long years of clinical study of psychotic patients by many psychiatrists.

There are many problems in such a diagnostic categorization. There is the question of the essential unity of each major subcategory. Clinical evidence has shown, for instance, that many patients who are at first classifiable as belonging to the affective-reaction group later are classifiable as belonging to the schizophrenic-reaction group [9]. There is also the problem of whether these subgroups adequately cover the entire range of functional psychotic reactions.

Eysenck, who has studied personality structure for many years, utilizing factor analysis as his major research tool, has come to the conclusion that two dimensions are necessary to account for the entire range of behavioral adjustments from normal to abnormal [10]. His evidence is interpreted by him to indicate that there is a general psychoticism factor which can be differentiated from the neurotic factor, and that these two factors serve adequately to account for his data. His data show that those tests which discriminate between normals and psychotics do not discrimate between these two groups and neurotics. Some critics have severely criticized Eysenck for both his methodology and his interpretations, but he has continued to maintain his position [11].

In the very recent past, attempts have been made in this country to assimilate and explore anew factor-analytic studies of psychotic reactions. Lorr and his colleagues have conducted a series of studies in their attempt to explore the psychotic phenomenon [12]. Utilizing Guttman's concept of a circular law of behavior [13] for explaining parsimoniously the structure of interpersonal behavior, they have proposed ten syndromes (or clusters of behavior symptoms) to account for all of the rated behavior of the patients in their studies. They employed a 75-item rating scale (The Inpatient Multidimensional Psychiatric Scale) which was applied by expert interviewers to 566 patients in 44 hospitals. It is still too early to say how well this ten-syndrome analysis will stand up under the scrutiny of developmental studies, follow-up studies, and further experimental evaluation.

For the present, we shall continue to follow the clinical

classification proposed by the American Psychiatric Association, recognizing full well that a better scheme may become available in the future.

There are many clinical types of psychoses, and it is not our purpose to treat each of these exhaustively in this volume. Instead we shall concentrate our attention on *schizophrenia*, the most common form of psychosis, and then by way of contrast discuss the *manic-depressive* form. Both of these are classified as *functional psychoses*, by which it is meant that the condition is predominantly attributable to emotional maladaptation, although organic factors may be involved, and that it constitutes a disturbance in the functional aspects of behavior. Another general category of psychoses is called *organic*. These psychoses are severely disturbed forms of behavior in which the condition is primarily attributable to some organic factor. Included in this category are *alcoholic psychoses* (due to the effects on the biochemistry of the body of excessive and prolonged use of alcohol), *senile psychoses* (due to certain effects of the aging process on the central nervous system), *paresis* (due to a neurosyphilitic condition), and *toxic psychoses* (due to the effects of toxic agents). Of course, every functional psychosis involves disturbance in the functions or even the structure of some organ or organs, and every organic psychosis involves disturbance in some function or functions. Nevertheless, the distinction is made to indicate the probable primacy of either the organic or functional factor in the causation (etiology) of the psychosis or to indicate which factor represents the more significant disturbance in an organ or in some functional aspects of behavior.

THE SCHIZOPHRENIAS Schizophrenia takes many forms. As we shall see, there is some doubt that all forms represent the same "disease." Hence, we title this section "The Schizophrenias" to acknowledge the indeterminacy of this question.

Schizophrenia is not only the most prevalent psychosis in our society but is also the psychosis which has been most exhaustively studied—by both clinical and experimental research methods. Yet opinions of experts in the mental health field are sharply divided about its causes. Despite their inconclusiveness, the intensive analyses which have been made of the findings on causation shed considerable light on the phenomenon of "mental illness" and, therefore, of mental health. Similarly, the

well-documented studies of the clinical manifestations of the schizophrenias cast the mechanisms of many other abnormal and normal conditions into sharper relief. These are some of the reasons for devoting considerable attention to this topic.

Types of schizophrenia The classification of types of schizophrenia which is still officially recognized by the American Psychiatric Association is essentially that proposed by Kraepelin some fifty years ago. Basing his analysis upon clinical observations, Kraepelin suggested four main types of schizophrenia: simple, catatonic, hebephrenic, and paranoid [14]. The official classification in this country consists of these four types plus four others which can be regarded as pigeonholes for cases with mixed symptoms or with conditions that vary over time and which therefore do not constitute new categories but are simply categories of convenience for the practitioner.[2] However, even within the four classical categories, patients differ with respect to such factors as severity of the reaction, age of onset of the reaction, and progress of the illness. In other words, not all paranoid schizophrenics are alike with respect to how much they have regressed, or when their illness became manifest, or the likelihood of their recovery or nonrecovery.

THE SIMPLE TYPE. In simple schizophrenia the individual slowly loses interest in the world around him and becomes increasingly incapable of living up to his former promise. Because of the slow *onset* of this illness, it is termed *insidious*. Moreover, there usually are no dramatic symptoms like delusions or hallucinations. Instead, there is a gradual loss of initiative, there is an increasing inability to work, and there is an increasing poverty of thought. Emotional reactions become increasingly more shallow (*flattened*) and resemble those of a young child in their immaturity. Especially important is the gradual loss of capacity for abstract thinking, so that there may appear to be a condition of mental retardation rather than psychosis.

The simple type of schizophrenia is not really simple at all. This designation indicates that there is no bizzarre behavior. The complex process of regression which underlies the reaction may not halt until the individual reaches a very low level of adaptation and may result in total social ineffectiveness. Many simple schizophrenics spend their adult lifetime in a psychiatric

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[2] These are: chronic undifferentiated, acute undifferentiated, residual, and schizo-affective types.

hospital; others become beachcombers, prostitutes, or derelicts. Fortunately, although therapeutic efforts are difficult, modern methods of treatment can do much to arrest the development of this condition or to produce considerable recovery. In this connection, it is important to note that, the earlier the condition is detected and diagnosed and the earlier treatment is provided, the greater are the chances for recovery or at least improvement.

THE CATATONIC TYPE. In sharp contrast to the simple type, the catatonic reaction appears quite suddenly. The reaction usually begins with a period of great agitation and marked excitement which appear to be unrelated to external events in the patient's life. The agitation seems to have no purpose. Following this period, the patient may become increasingly inactive and more stuporous. In both phases the behavior appears bizarre and irrational. In both, the psychomotor sphere of activity is primarily involved. The term "psychomotor" rather than "motor" is employed because the willful or volitional aspects of behavior are disturbed even though the overt manifestation is a great increase or decrease in motor activity. The patient is in extreme conflict and withdraws into preoccupation with his conflicting impulses. Thus, he may be unresponsive to external stimulation (even though subsequently he can tell you the exact nature of this stimulation).

The following excerpt from clinical notes made concerning a catatonic patient may help to concretize this kind of behavior:

Harry, aged 32 years, was brought into the examining room by an attendant. He was literally led into the office since the attendant had to pull him by the arm. He stood where he had been left until the examiner motioned him to a chair and gently helped him into it. Then he sat staring off into space. The focus of the interview was to learn something of his current work interests so that he might be motivated for some appropriate occupational therapy in the hospital. He made no response to questions except to repeat a few of them mechanically. However, he would startle violently whenever there was some noise in the hall outside of the room. At the same time his face remained mask-like in appearance. After some 20 minutes spent fruitlessly in attempting to engage him in some discussion of his interests, during which he became increasingly rigid and motionless in postural adjustment, the interview was ended, and with some prodding he was finally able to be helped out of the room.

Three days later, another interview was attempted. This time he seemed more animated and engaged in a little spontaneous

conversation. His muscular rigidity was far less pronounced than during the previous visit. When asked about his vocational interests, he began to respond with the query, "Didn't you ask me about that the last time?" He was asked to tell what he remembered of his last visit and he was remarkably clear about most of the questions he had been asked.

The two phases of catatonia do *not* occur inevitably. Some patients reveal only catatonic stupor. In this condition, they may be extremely negativistic. They may refuse to move or to eat, and they may show extreme insensitivity to painful stimulation. They may withhold their urine or feces. They may stare at a spot on the floor for long periods of time. They may refuse to speak. If they are placed in an awkward position, they may retain this position for hours. Conversely, in catatonic excitement, all motor activities are speeded up. There may be incessant activity. There may be sudden and apparently inexplicable periods of violent destructiveness.

In either phase of catatonia, there usually are both hallucinations and delusions, although the presence of these phenomena may not be overtly noticeable because of the patient's inability to communicate until the stupor or excitement abates. To the catatonic patient, all of his apparently purposeless activity or inactivity has meaning in terms of his inner conflicts. During periods of remission (abatement) of symptoms, he may be able to communicate this meaning.

Catatonic reactions can involve some or all of the above characteristics and phases. In some cases catatonia is a prelude to another type of schizophrenia. In others there may be a sudden recovery with no subsequent relapse. Treatment of catatonic reactions by modern methods, such as electric shock therapy, or drug therapy, especially if accompanied or followed by psychotherapy, often proves very helpful. (See Chapter 7.)

THE HEBEPHRENIC TYPE. The onset of hebephrenic reactions may be slow and insidious, like the simple type, or, as is more common, it may develop quite rapidly, more like the catatonic type. In either case, there is almost always a long history of prior silly or inappropriate behavior, so that the hebephrenic seemed "odd" earlier in life. In general, the behavior of hebephrenics exaggerates that of a young adolescent who is acting queer or silly. More specifically, the course of this illness shows the following characteristics: increasing degrees of inappropriateness of behavior; discrepancies between mood and thought

content; manneristic speech and behavior; increasing preoccupation with inner life; hallucinatory behavior and numerous delusions (especially of grandeur); bizarre hypochondriacal ideas (such as a feeling that his brain has shifted to another part of his body); and, above all, very severe desocialization and deterioration of personality. These may be so extreme that the patient is rendered incoherent and has to be taken care of.

Hebephrenia is clearly recognizable to the layman as an abnormality because of its bizarre characteristics. In the early stages it is difficult to distinguish this condition from other types of schizophrenia. In the past such patients were usually seen in psychiatric hospitals in their severely regressed and deteriorated states, living at or near a vegetative or mere existence level. Today many cases of hebephrenia are helped long before this state of regression has been reached. Moreover, increasing numbers of them recover significantly with effective and intense treatment.

THE PARANOID TYPE. This type usually develops later in life than the other types (most commonly in the age range of 30–50 years), and is characterized by the prominence of delusions that characteristically involve anger and suspiciousness. The overt development of these phenomena is preceded by a long history of emotional instability involving suspiciousness of others as well as sadistic and deprecatory attitudes. Gradually, delusional thinking becomes more prominent and is defended with more and more rationalization. Hallucinations are also prominent in the clinical picture. The mechanism of projection (described in Chapter 4) is quite apparent in these individuals. Despite the delusional and hallucinatory behavior of paranoids, they usually do not regress rapidly; many remain at the same level of psychotic involvement for some period of time. Others may recover spontaneously or with therapeutic help. Those who do not recover within the first two years of their acute illness or who do not receive therapeutic help relatively early usually become somewhat more regressed in time. However, most paranoids maintain relatively good contact with reality, except in the areas of their delusions, and are able to channel their energies into useful and productive work. Some paranoids who feel very persecuted and who have a high tension level act unpredictably and are physically aggressive and even homicidal. Unlike hebephrenics, emotional mood is usually closely congruent with ideational content. A central conflict in many cases

of paranoid schizophrenia, although quite clearly not in all of them, involves homosexual impulses. According to Freud, the persecutory attitudes of such male paranoids follow the formula:

1. "I love men."
2. This impulse is unacceptable, is "reversed," and is then experienced as, "I hate men."
3. This feeling is then "projected" and therefore is experienced as, "Men hate me."

We noted that the course of individuals with paranoid schizophrenia is highly variable. When the illness progresses, it can assume some of the characteristics of catatonia or hebephrenia or both.

Psychodynamics of schizophrenia reactions Now let us summarize some of the mechanisms employed by schizophrenics and analyze the nature of the conflicts and stresses which they suffer. In doing so, we shall emphasize the differences in intensity and in patterns from less severe forms of mental illness. The similarities will also be noted.

One of the most important processes in schizophrenia is that of regression. We shall discuss later whether this is largely or entirely due to psychological conflict or whether it is significantly influenced by genetic and biochemical factors. In any case, severe regression, as exemplified in hebephrenia, represents a marked failure in adaptive capacities (or in adaptive functions of the ego) and is accompanied by behavior which is similar to that found in the preoccupation of young children with autoerotic fantasies and loss of impulse control. Schizophrenia has been viewed as a process of progressive maladaptation, and it has been suggested that severe anxiety and conflict (which trigger off the regression) cause inadequate neural discharge and poor integration in behavioral responses [15]. In this respect the severe regression we see in many cases of schizophrenia is not essentially different from the moderate or temporary regression encountered in normals and neurotics under conditions of stress.

Not all workers are willing to accept the thesis that regression in the psychotic differs only in degree from the normal to the psychotic population. As we noted previously, Eysenck believes that the hypothesis of one dimension or type of regression is untenable [16]. His data, based on a battery of tests, showed

that he could discriminate normals from psychotics but "on the whole" could not discriminate normals from neurotics. Hence he concludes that two separate personality variables are necessary to explain the findings. However, even if we assume that his techniques of factor analysis are valid and that there is a qualitative difference in personality dimensions between psychotics, on the one hand, and normals and neurotics, on the other, it is still possible to conceive that psychotics suffer damage to the ego at an earlier age and consequently manifest a greater degree of regression. Therefore, this regression would be both *quantitatively* and *qualitatively* different. An analogy may be made with the process of reducing the temperature of water, in which differences in degree of the temperature do not produce qualitative change until the temperature gets below the freezing point, when ice is formed.

Closely related to the problem of regression is that of *fixation*. The schizophrenic seems to be fixated behaviorally at an earlier period in his psychodynamic development. During regression, patterns of behavior may be reinstated that are similar to those that were fixated previously. Fixation is not an all-or-none process. Each of us is fixated to some degree in terms of earlier periods of development. Some of these fixations are mild and others are more severe. The schizophrenic, however, has deeper and varied patterns of fixation. Therefore, his behavior tends to fluctuate widely during periods of stress, sometimes exhibiting regression very markedly and other times only slightly. This variability in regression, and in its severity, makes it more difficult for the schizophrenic to test reality accurately. In severe regression he tends to be oblivious of external stress, although he retains awareness of inner impulses and fantasies. In periods of moderate regression he may be much more aware of external reality. The normal individual who regresses slightly during stress may have perceptions that are influenced by needs, too, but he can more easily check them against reality and so obtain more nearly valid perceptual experience. It is the severity of, and variability in, fixation which makes it more difficult for the schizophrenic to test reality. In turn, this facilitates even more regression and less capacity to cope with reality.

Another characteristic observed in the clinical descriptions of the schizophrenic is the *failure of repression*. The patient becomes aware of feelings, impulses, and thoughts and has to express them, often in ways which seem incomprehensible to

the normal person. However, we may remember from our discussion in Chapter 4 that repression sometimes fails in both normals and neurotics. Examples of this, we may recall, are slips of the tongue (in which we say something we did not intend to say and are unaware of the "slip") and "normal" hallucinatory experiences (such as those that occur under conditions of sensory deprivation). The young child frequently has hallucinatory experiences, yet this behavior is not regarded as psychotic [17]. The schizophrenic, in contrast, reveals a massive or severe failure of repression. Hence, unconscious material floods his consciousness and further beclouds the accuracy of the perceptions of his environment. This delusional or hallucinatory behavior may be conceived of as attempts to reconstruct a seemingly reality-oriented world, although we who observe this behavior view it as pathological. In these forms of behavior the person tries to project his internal wishes upon the external world (a person or an object) and thereby gain some degree of control over his impulses while satisfying his internal needs.

Other defense mechanisms which are characteristically part of the pattern of schizophrenic behavior are *denial, projection,* and *introjection.* Once again, we must note that normals and neurotics also employ these mechanisms, but in the case of schizophrenics they are predominant in the defensive hierarchy. Not only are they the *preferred mechanisms*—for schizophrenics employ, at times, all of the other defense mechanisms—but denial, projection, and introjection are more fully developed, perhaps as the result of frequent reinforcement. These mechanisms offer some defense against conflict and anxiety, mainly in avoiding the conflict situation. However, they offer little opportunity for reality-testing. Hence, their continual use facilitates regression and produces a vicious spiral of increasing avoidance, more intense conflict, and then more complete avoidance of reality.

Another interesting aspect of schizophrenic behavior, and perhaps one of central importance, is the disturbance in thinking. Although the thought processes of persons with other forms of psychosis may seem strange because they are "frenzied" or show indications of "wandering," they seem understandable to some degree. But the schizophrenic's thinking is often expressed in a weird garble of incoherent phrases and strange words (*neologisms*). For example, one patient, when asked how he

happened to be in a psychiatric hospital, replied, "Well, it seems strangulous. But usurpations by others require radio contacts. Our enemies are in there, and they comply but they never feign. Only when it's dark and cold, one must face them." Perhaps the reader may catch a glimpse of the paranoid process in which vague enemies, radio waves, feelings of aloneness, and feelings of impotence are suggested.

The thinking of schizophrenics has been studied intensively. In the early stages of schizophrenia, thinking is likely to be *stereotyped* (use of the same idea or the same phrase over and over again) and *scattered* (sequences of thought are unrelated or illogical). Later it becomes *less abstract* and *more concrete* (that is, concrete things are substituted for abstractions or generalizations). Goldstein has called attention to the *loss of the abstract attitude* and the substitution of a concrete attitude (or the inability to conceptualize) [18]. Arieti believes, however, that the schizophrenic not only withdraws and regresses from abstract to concrete thinking but actively transforms the abstract into the concrete [19]. This change in thinking pattern is not easily reversible, even under drugs, as Senf has shown [20]. When patients were intravenously administered sodium amytal, a drug which induces a "twilight sleep," they improved in responsiveness but did not improve in the precision of their thinking.

Schizophrenic thinking is marked by its infantile character. It employs the types of logic and symbols that are characteristic of the most primitive minds. It no longer follows Aristotelian logic, which is indicative of secondary processes in personality development, but rather shows characteristics of earlier forms of logic; i.e., "paleologic." Von Domarus compares these forms of logic as follows: "Whereas the normal person accepts identity only upon the basis of identical subjects, the paleologician accepts identity based upon identical predicates" [21]. Paleologic would reach the following conclusion based on the following premises:

1. Horses have legs.
2. Dr. Smith has legs.
3. Dr. Smith, therefore, is a horse.

Not only is the logic of the schizophrenic primitive; it is also governed to a great extent by "primary process," that is, it is

based on internal needs and does not obey consistent, logical principles.

Arieti believes that schizophrenic thought may be characterized, in general, as showing *teleological regression* [19]. Such thinking is regressive but is purposeful (i.e., is directed toward specific goals). It serves to avoid severe anxiety by the substitution of fantasy for a reality that the patient finds too difficult to cope with. If we examine the schizophrenic's thoughts with this principle in mind, we can sometimes discover the wishes he is trying to avoid.

It is clear that, although schizophrenic thought is disorganized, the intellectual level of the schizophrenic is not necessarily permanently impaired [22]. Only some aspects of the thinking process are severely disturbed. Schizophrenics have difficulty in attending to current tasks, adopting flexible approaches to problems, and persisting in task-completion. Hence they may score lower than might be expected on intelligence tests. However, the quality of schizophrenic thought is different from that of normals. Schilder suggested, some time ago, "The characteristic content of the unfinished thoughts of the schizophrenic is the characteristic for the thought processes of primitives" [23]. In this respect, this psychotic group is quite different from both normals and neurotics, but, as we have indicated, it is not so different from the thinking of very young normal children.

Problems concerning theories of schizophrenia Various theoretical explanations have been proposed concerning the causes of schizophrenia, and we shall attempt to summarize them briefly. But before doing this, it might be well to discuss some of the general problems concerning the study of causes which apply to all forms of mental illness or maladjustment. These difficulties are dramatically illustrated in the study of schizophrenia.

We should note, first, that we are dealing with *end products* when we study the clinical forms of schizophrenia. These psychiatric conditions, like most forms of maladjustment, whether severe or mild, are diagnosed and classified on the basis of a *clinical syndrome* (group of symptoms). It is well known, however, that the same symptom may have different causes as well as different meanings in the case of different individuals. The same point is applicable to syndromes [24]. As an illustration, we may note that aggression is manifested differently in different social classes [25] and that aggressive behavior has

different significance for different individuals. Hence, when we group people together in a nosological category (like schizophrenia), or even when we group them by subtypes of symptoms, we may be including the end results of many kinds of *processes*. The conditions leading to the several members of each type or subtype may, in fact, be quite different.

It has also been repeatedly established that the outcomes of schizophrenic reactions are markedly different depending upon the nature of the onset of the illness [26]. When the illness develops suddenly (acute condition), the *prognosis* (or outlook) is much more favorable than when it is slow and insidious (chronic condition). Similarly, when the onset is accompanied by intense anxiety (evidence of conflict with which the patient is struggling), the outcome is likely to be more favorable than when this is not the case. Certain questions immediately come to mind. Are these conditions similar with respect to symptoms but different with respect to development and other behavioral outcomes? And if they are, to what extent is the process underlying the disease influenced, for better or worse, by external social or emotional conditions (or other conditions)?

The striking difference in prognosis of different schizophrenics has fostered the development of an over-all categorization of schizophrenics into two major classes: *reactive and process* [27]. The former, with acute onset, have a favorable prognosis; the latter, with slow onset, have a relatively unfavorable prognosis. But how are we to explain the factors that contribute to reactive and to process types of phenomena? Is a "process schizophrenic" merely an individual with more pathology than a "reactive schizophrenic"? Is the reactive type capable of withstanding stresses better than the process type because of compensating factors in his constitution? And if we assume that the reactive type is produced as a reaction to the relatively sudden exposure to anxiety, and not primarily as a result of endogenous factors, why do schizophrenics with lesser amounts of anxiety have such a poor prognosis?

Still another general issue which must concern us is the question of the relative homogeneity or heterogeneity of the different forms of schizophrenia. Many catatonics later develop paranoid and hebephrenic symptoms, or combinations of these symptoms. Others do not. What distinguishes these two types of catatonics? Are we dealing with one or several nosological categories? Are these differences in the course of the catatonic

reaction to be explained on the basis of differences in original constitution, differences in the developmental histories, or interactions of these two classes of events? As we shall see in the next section, no single answer is at present universally acceptable. The more we learn about this condition (or these conditions), the more we appreciate the complexity of all mental health phenomena.

Theories of the etiology of schizophrenia   Theories of the etiology of schizophrenia range through the whole continuum from those proposing exclusive genetic determination, at one extreme, to the completely psychodynamic determination, at the other extreme. Each theory attempts to explain the whole range of schizophrenic phenomena, usually making the implicit assumption that what is involved is a single disease or pathological entity. We have suggested that there is serious difficulty with the assumption of a unitary condition. Slater, who has made extensive studies of data from identical and fraternal schizophrenics, analyzed findings supplied by Kallmann [28], one of the foremost proponents of the unitary position, and found that the clinical subtypes of this illness were genetically heterogeneous [29]. Another line of evidence, which considers the age at onset of the schizophrenic reaction, casts doubt on the unitary position. If the condition were unitary, and if hereditary factors were responsible, there should be a high degree of correlation for the age at onset of monozygotic twins and increasingly lower degrees of correlation, respectively, for dizygotic twins and siblings. The evidence on this problem clearly does not support this position [30]. Slater found, in fact, that the correlation for age at onset for monozygotic twins was .54, whereas it was .74 for dizygotic twins. For concordant siblings the correlation was .50. Clearly, such findings, if replicated, must cast doubt on any monogenetic hypothesis.

One could argue, of course, that (1) schizophrenia is genetically determined but the specific forms of expression are not (the latter being influenced by nongenetic factors, such as the nature of stresses) and (2) schizophrenia is not genetically determined, but some predisposition to it is genetically determined. These and other arguments may now be examined as we discuss the various theories.

MONOGENETIC THEORIES.   Theories which support this position argue that schizophrenia is a specific, inherited disease and that persons who inherit certain genetic factors will almost

inevitably develop the complete clinical manifestations. The general position taken by such theorists is that schizophrenia is attributable to a single recessive Mendelian type of gene. Little or no significance is given to environmental stress as contributing to the illness.

The work most frequently cited in support of this position is that of Kallmann, who in the research already described, as well as in later research based on 953 twins from psychiatric hospitals in New York [31], showed that the incidence of the schizophrenic reaction increased sharply when rates of congruence (that is, agreement among pairs) were considered for pairs of half-siblings, siblings, fraternal twins, and identical twins. The rates rose from 7.0 percent in the first group to 85.8 percent in the last group. Other researchers employing this approach have not been able to achieve results as spectacular as Kallmann, but their findings have been in the same direction. The argument proposed by these workers is that the greater the similarity in heredity, the closer the congruence rate for the incidence of schizophrenia when one member of the pair has schizophrenia.

Many workers have challenged the conclusion of such studies, some arguing that only a predisposition to the illness is suggested by the data, while others indicate that even this possibility is not clearly proved. Koller has reanalyzed Kallmann's data and has shown that they do not support his own hypothesis, even if they are taken at face value [32]. His argument is that if single recessivity is the hereditary basis of schizophrenia, the incidence for siblings should be higher than for the children of schizophrenics, but Kallman's data show the opposite results. Pastore has argued that various methodological errors of a serious nature were made in Kallmann's studies which vitiate his conclusions [33]. The difference in congruence rates for siblings and identical twins can be explained, say many workers, on the grounds that twins have much more similar familial and environmental experiences than siblings, even though all come from the same family. This argument, it must be admitted, does not necessarily account for the difference between identical and nonidentical twins, since both types of twins live in similar familial conditions yet show such a wide divergence in rates (85.8 percent as compared with 14.7 percent). However, nonidentical twins may be of different sexes, may be treated quite dissimilarly by home and community, and

may be biologically and genetically quite different. Which of these factors contributes to the illness, and to what degree, is undetermined. Moreover, some investigators, using sampling techniques different from Kallmann's (by sampling community rather than hospital subjects, for example), obtain results in opposition to his. For example, Essen-Möller, in an analysis of results with monozygotic twins only, found that the psychiatric conditions and personalities in *every pair of twins* were divergent and not congruent [34]. In fact, the psychiatric outcomes were divergent for every pair of twins.

An adequate test of the monogenetic hypothesis would require, among other things, that monozygotic twins from schizophrenic parents be separated from each other in *early infancy* and that the separate members of each pair be placed in widely differing types of home conditions (as, for example, in homes with very healthy and stable adults as compared with homes containing schizophrenic adults). Studies of this kind have not been attempted on an experimental basis, for obvious reasons, and have occurred very infrequently on a natural basis. It is noteworthy, however, that this kind of twin-study, investigating hereditary-environmental influences on intellectual development, has tended to indicate greater effect of environmental factors than was anticipated on genetic grounds [35].

PREDISPOSITION THEORIES. In this category may be grouped the diverse theories which propose that what is inherited is either a specific predisposition toward schizophrenia which, when complemented by stressful conditions of living, especially in early life, or when not compensated for by other, more healthful constitutional or environmental conditions, leads to the development of the illness—or to a more general predisposition toward the development of psychopathology.

Meehl presents the most forceful case for this type of position [36]. He postulates a "neural integrative defect" (defined as "an aberration in some parameter of single cell function") as a necessary precondition for the development of schizophrenia. He calls people with this defect *schizotaxics* and states:

All schizotaxics become, *on all actually existing social learning regimes,* schizotypic in personality organization; but most remain compensated. A minority . . . are . . . potentiated into clinical schizophrenia. . . . The schizotype is a person who, having been schizotaxic, because of certain social experiences (and therefore because of learning) exhibits four core behavior

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traits: cognitive slippage; anhedonia; ambivalence; and interpersonal aversiveness.

"Remaining compensated" means that such individuals have sufficient defenses to avoid becoming actual schizophrenics.

Meehl believes that the four behavior traits are *inevitably* learned under present conditions of life because of the schizotaxic predisposition and whether schizophrenia develops in a schizotaxic individual depends upon the effects of modifying genes and environmental conditions.

Meehl recognizes certain difficulties with his theory. He indicates, for example, that the genetic basis for the four core traits may be questioned on the basis of recent experimental and psychotherapeutic experiences which indicate that a wide variety of individuals (schizophrenic as well as nonschizophrenic) may either develop the traits or markedly modify them. But there are other questions which pose serious difficulties for this type of theory. If there is a specific predisposition (which schizotaxia implies), how is one to account for sex differences in the incidence of schizophrenia? How is one to account for *marked differences* in the incidence of schizophrenia in differing cultures [37]? Are only the four core traits, singly or in combination, the essence of schizophrenia? And, if so, how is one to account for differences in the incidence of schizophrenia among people who seem to have one of these types of traits (like introversion) [38]? And, is schizophrenia really a unitary disease, as Meehl implies?

SOMATIC HYPOTHESES. Many types of somatic hypotheses have been offered to account for schizophrenia. We can refer to only some of these by way of illustration. Sheldon and his coworkers have suggested that body type (that of the asthenic or ectomorphic) is significantly associated with the incidence of schizophrenia [39]. (See Chapter 5.) This hypothesis has not been confirmed. Moreover, individuals with nonectomorphic personality attributes frequently become schizophrenics.

Biochemical and neuropathological differences have been postulated as the basis for the schizophrenic reaction [40, 41]. A wide variety of suspected factors has been suggested, but none of these has yet been shown to be specific for schizophrenia. Similar biochemical phenomena may also be found among nonschizophrenics [42]. Moreover, the conditions may not be necessarily attributable to schizophrenia per se but to its *consequences,* which influence ways of living and therefore

body chemistry. Some workers believe that schizophrenia is primarily a metabolic disorder, due to the formation of "taraxein" [43]. This, in turn, is symptomatic of a defect in the oxidizing enzyme system. However, these studies are criticized on the grounds of inadequate methodological controls, and their findings await further confirmation. We must always ask: Is the changed biochemical functioning or neural structure the cause or the result of the psychopathology?

PSYCHOGENIC THEORIES. These theories suggest that some forms of schizophrenia, at least, are attributable to profound disturbances in the functioning of the ego. Such disturbances may result from various types of constitutional inadequacies or from entirely psychological factors. Jung was the first to propose that severe emotional difficulties might produce toxins which damage the brain [44]. Freud believed that due to severe fixations early in life the individual loses the capacity for coping with reality and withdraws libidinal energy from the world. He may never mature beyond the early schizophrenic, narcissistic stage, or he may regress to the early stages of ego development when under stress later in life [45].

Research has amply documented the proposition that pathological family relationships, and, particularly, severe pathology in the mother (who is most important in the young infant's life), characterize the developmental history of many schizophrenics [46]. The significant finding is that the lack of communication between mother and child, due to the highly inconsistent relationship between mother and child, produces in the child either (*a*) severe overt anxiety, which prevents adequate coping with these conditions, or (*b*) extreme withdrawal (autism), often with little overt evidence of anxiety [47]. At least some forms of schizophrenia are seen as an extreme withdrawal from the world. Other forms are seen as regression under external stress, due to the prior fixations, which did not previously precipitate the illness. Still others are viewed as almost heroic attempts by the individual to maintain some form of personality integrity and self-esteem under internal and external stresses during critical periods in the person's life [48]. Such individuals manage to maintain a precarious but "brittle" integration in personality.

Recent psychogenic theorists have attempted to describe psychoanalytic or other psychogenic theories of schizophrenia in terms of specific operations or procedures. Cameron has

proposed a "social disorganization theory" in which failure in communication and withdrawal into a pseudocommunity results from social-learning conditions that are definable and objectively measurable [49]. Mednick proposes that intense anxiety, which spreads and generalizes, produces reinforcement of idiosyncratic responses. These in turn lead to psychotic personality organization and development [50]. These idiosyncratic responses are not extinguished because of some genetic factor or because of an "impossible" external situation. This theory would not account for some forms of schizophrenic development in which high anxiety levels do not seem to be present, but it does allow for both genetic and social-learning conditions to interact in the development of schizophrenia.

PRESENT STATUS OF THEORIES. Obviously, the last word has not been written about schizophrenia. We cannot be certain whether we are dealing with a unitary phenomenon or with many different but related phenomena. We are not even certain that all schizophrenic reactions are truly psychotic; certainly some transient "schizophrenic" reactions may not be. It may be that genetic factors contribute in some way toward a disposition for schizophreniform behavior, but it is questionable whether such a disposition is a necessary precondition for the illness. It is questionable whether, if a predisposition is necessary, it leads to general psychopathological and disorganized personality development or to schizophrenia specifically. Social-learning conditions and various types of anxiety reactions have been shown to play a prominent role in many cases of schizophrenia, but the extent of their significance is still open to question.

Psychogenic theories give comfort to psychotherapists, who hope to assist patients by psychotherapeutic means. Somatic theories give comfort to those who hope to find biochemical antidotes for this condition. Increased knowledge will assist both groups of scientists in preventive and treatment programs, but, above all, it will help us to understand more about human behavior, normal as well as abnormal. We need to learn much more about continuities and discontinuities across the whole spectrum of behavior reactions and the mediating mechanisms that are involved in the process of "being human."

THE MANIC-DEPRESSIVE PSYCHOSES

This psychosis is characterized by periods of great excitement, increased motor activity, and an elation of mood—or by periods of melancholia,

decreased motor activity, and a poverty of thought—or by both conditions, alternately. In contrast to the schizophrenias, there may be little loss of contact with reality. Also in contrast, social and psychological factors apparently have a greater role in precipitating the illness. Moreover, while there is severe regression in this form of psychosis, fragmentation of the ego is *not* a prominent part of the clinical picture, and deterioration into infantile types of behavior is rarely present.

We shall consider briefly the clinical forms of this illness, then consider the underlying psychodynamics, and finally evaluate the etiological factors that are held to be responsible. The classification of mania and depression as circular and opposing phases of a single process was not accepted until 1899 when Kraepelin proposed this method of analysis [51]. Today, however, there is some doubt concerning the unitary nature of this illness.

Depression The major characteristics of "psychotic depression" are (1) a more or less severe depression of mood; (2) disturbances in the thinking processes, manifested mainly in a slowing-down of such processes; (3) a preoccupation with morbid ideas; and (4) psychomotor retardation, in which all motor movements are slow, e.g., the behavior shows lethargy or stupor. Other indications are slower speech and slower perceptual reactions. Great effort may be needed to accomplish even the most simple, routine task. Along with these primary symptoms there may be, especially in cases of severe depression, marked decrease in physiological functions. Appetite is decreased, sleep is difficult, and there may be a marked loss of weight. In the most severe cases, a state of stupor is reached, patients become mute, and almost all forms of responsiveness are severely restricted. Suicide may be attempted and, noteworthy in this respect, it may be tried just when it appears that the patient is beginning to make a recovery.

In this illness delusions and hallucinations are rare. Rather, the individual complains that he cannot think and that he feels guilty and worthless. When delusions do occur, they often are related to the individual's mood and are self-accusatory or take the form of excessive concern over disease and death.

The depressed patient either consciously seeks support or behaves in such a way as to require an almost inexhaustible amount of help. Nevertheless, except in the most severe cases, the patient is in touch with reality and does not show the

disorganized type of thinking so characteristic of schizophrenics.

Mania In many respects, mania is the polar opposite of depression. Its major characteristics are (1) a more or less marked elevation of mood, (2) a disturbance in thinking processes, with an increased pace of ideation, flights of ideas, and an incessant need to talk, and (3) a psychomotor acceleration. There may be physiological symptoms, including loss of appetite, sleeping difficulties, and loss of weight.

Frequently mania is preceded by depression, although the opposite may also occur. It has been suggested that the mania is a defense against feelings of guilt and worthlessness. The manic patient shows a great increase in *apparent* self-esteem. He thinks quickly, brags quite a bit, is boisterous, and is quite socially intrusive in other ways. If he does develop delusions, they are likely to be delusions of grandeur—great abilities, prowess, or wealth. To the average person, such behavior appears to represent only an extreme boastfulness. He may enjoy the unusual "story-telling" capacities of the patient, with his verbal facility. Despite the increased ideational or associational capacity of such patients, their thoughts are shallow or impoverished.

Mixed reactions Some patients not only exhibit successive periods of depression and mania but show periods of *agitated depression, manic stupor,* and other varied combinations of the types of symptoms we have already described. Moreover, although from 30 to 40 percent of individuals who have an attack of either mania or depression never have a recurrence [52], others may have a number of attacks. These may become progressively worse. Still others may develop schizophrenic reactions. Figure 6.3 illustrates some of the types of reactions which occur.

Psychodynamic considerations Many cases of manic-depressive psychosis recover completely after a single attack; only a few deteriorate. When recovery is not spontaneous or when psychotherapy is ineffective, recent advances in treatment have enabled mental health workers to produce rapid and effective recovery by means of electroshock therapy or the use of antidepressant or tranquilizing drugs. (See Chapter 7 for a discussion of these and related methods.) In fact, one of the major distinguishing features of this psychosis from schizophrenia is the much more favorable prognosis.
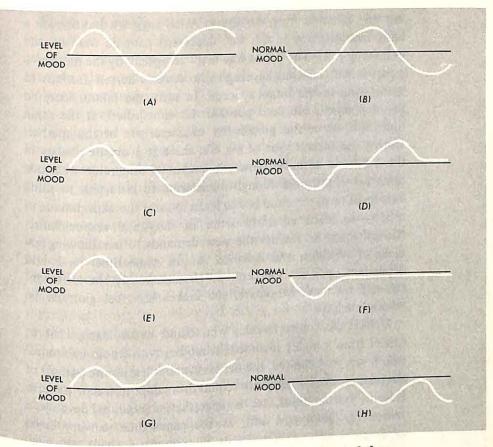
FIGURE 6.3 *Patterns of manic-depressive, manic, and depressive reactions. (A): manic-depressive reaction, beginning with mania; (B): manic-depressive reaction, beginning with depression; (C) and (D): manic-depressive reactions with normal interludes; (E) and (F): single attacks of mania and depression, respectively; (G) and (H): recurrent attacks of mania and depression, respectively.*

The first systematic attempt to explain the dynamics of depression was offered by one of Freud's disciples, Karl Abraham, who believed that depression was not unlike normal mourning, except that in the latter case one mourned a lost person and, after a period of time, the grief abated [53]. In depression, one feels guilty and really mourns the "lost person" that had been assimilated (incorporated) in one's own personality. Abraham believed that such phenomena in depression presupposed previous fixation at the oral, and to some extent at the anal-sadistic, level.

The modern dynamic conception of psychotic depression is

not very different from the above. Arieti suggests that there is a basic inconsistency in the way depressed patients were treated in infancy [54]. The infant was first "accepted" by the mother—a person with a strong superego who devotes herself *dutifully* to ministering to the infant's needs. In turn, the infant accepted this dependent, succored position. He introjected, at the same time, this moralistic personality characteristic of the mother. During the second year of his life, there is a drastic change in the mother's attitude. Now she makes considerable demands upon her child, even though ministering to his needs to some extent. In turn, the child has to learn to meet the expectations of others—to learn an early sense of duty and responsibility. Nevertheless, he resents the new demands, often showing attacks of rebellion and defiance. At the same time, he is still dependent upon his mother, and simultaneously she is unconsciously resented. Moreover, she makes him feel guilty if he "doesn't behave."

Unlike the schizophrenic, who could never learn what to expect from a highly inconsistent mother with whom communication was very limited, the depressive first learns one pattern of interaction, then is suddenly required to adapt to a new pattern. Despite his fixations, he is nevertheless able to develop a reasonably good ego and, at the same time, a very strict superego.

Depressions are precipitated in later life by an actual or threatened loss of "supplies" (sources of succor). This can be a person or an object that has great significance for the individual. If the patient suffers a sudden loss in self-esteem, he mourns as if he had lost something from within himself. He directs his feelings of hostility toward himself and simultaneously feels guilty. In psychoanalytic terms, there is regression to the oral stage, a renewed demand for "supplies," and a conflict between ego and superego. In this struggle, the superego dominates and the ego is subordinated.

Manic reactions are frequently interpreted as defenses against depression. There is an apparent increase in self-esteem as the individual attempts to fight off the depression. Freud suggested that there is a fusion of ego and superego functions in which, in contrast to depression, the ego is freed to permit drive expression, and id impulses break through [55]. The condition is similar to sleep, when superego controls are relaxed and id material appears in dreams.

Etiology of manic-depressive psychosis One of the interesting findings about this condition is that its incidence varies greatly in different cultures. According to Eaton and Weil, for example, the predominant psychosis among the Hutterites is manic-depressive psychosis [37]. This sect constitutes a closely knit society which emphasizes moral values, the cohesiveness of the group, and the need for developing "inner-directedness." Externally directed aggression is not tolerated; strict conscience and excessive guilt are reinforced. Other studies show that cultures in which there is a relatively high incidence of this psychosis differ in many of the respects we have discussed above in terms of psychodynamic development [56]. Increases in the incidence of manic-depressive psychosis seem related to socioeconomic factors [57], so that there is a disproportionately higher incidence of this condition than of other psychotic conditions during times of economic depression. Such findings suggest, at least, that this psychosis is precipitated by social-psychological factors or that such factors are related to pre-dispositions for this type of maladjustment.

On the other hand, there are numerous proponents of the genetic viewpoint with respect to the etiology of this psychosis. Studies of families of such people reveal that manic-depressive conditions tend to "run in families" [58]. Some investigators believe that there is evidence of an inherited predisposition [59, 61]; others point out that the data do not support the laws of Mendelian inheritance [58]. Still others believe in the theory of multiple etiologies, some attacks being due to exogenous factors, some to endogenous factors, and still others to combinations of these factors. The evidence for genetic factors is far less convincing than in the case of schizophrenia, but still some kind of biological dysfunction may play an important role in some types of manic-depressive conditions [60].

The Psychoneuroses

A consideration of the many kinds of psychoneuroses will point up the fact that, while biochemical factors may be of some significance in these conditions, the basic contributing factor is psychological conflict. Neurotic conditions vary greatly in severity. Some may present only minor problems in adjustment, while others are utterly intolerable and produce an inability to

function effectively in life. The great majority of psychoneurotics are not hospitalized. A few are hospitalized because their doctors wish to make a more exhaustive search for possible underlying physiological factors.

We shall consider, first, the general nature of psychoneuroses, examine some specific examples, and then compare the psychoneuroses with the psychoses.

THE NATURE OF PSYCHONEUROTIC REACTIONS Psychoneuroses take many forms, which differ markedly in their outward manifestations yet have certain features in common. At the base of all such reactions is a continuing high anxiety level resulting from unresolved conflicts. In the case of *anxiety neurotics,* the anxiety is so intense it is almost palpable. These people complain that their condition is insufferable, and they have many physiological disturbances, including such symptoms as depression, headache, feelings of fatigue, tenseness of the body muscles, and difficulty in sleeping (often accompanied by frightful nightmares). In other cases the overt anxiety appears to be mild or is absent. For example, in the so-called *character disorders* or in the *"psychopathic" states,* there seems to be a distortion of the ways in which impulses are handled, but there are few, if any, complaints of anxiety. The observer may be unaware that any anxiety is present. These individuals complain that society is intolerant of their needs and not that they are suffering because of internal problems. However, as we shall see, these disturbances in behavior may also result from intolerable anxiety conditions, but the neurosis shields the individual from experiencing the anxiety. In other words, the anxiety has been transformed into aberrant forms of behavior. It is still there, however, as may be confirmed in psychotherapy, when the aberrant ways of behaving (and the defenses) are modified, and the individual begins to experience anxiety directly. In such cases we may think of the anxiety as being latent (see Chapter 4). There are also some types of psychoneuroses in which anxiety is *displaced* into physiological functions or physical organs or takes *symbolic* forms. This occurs in *conversion hysteria;* for example, the individual develops a functional paralysis of the hand although there is no neurological basis for it.

Thus we may say that anxiety, in some form, is at the base of all psychoneurotic conditions. We may also say that the anxiety

results from a neurotic conflict. We have previously discussed the nature of conflict, noting that when conflicts are unresolved, and have unconscious components, the individual learns to defend himself against the anxiety by means of inappropriate and stereotyped behavior. But why is the neurotic unable to resolve his conflict? Why does anxiety become so intense that it cannot be dealt with by ordinary means? The answer lies in the fact that neurotic conflicts develop out of situations in which the individual is unable to cope successfully with the external threat that is present. Typically, these situations originate in childhood when the individual's security system is threatened. This may occur when loss of support by the parents (separation anxiety) or fear of severe punishment because of forbidden impulses (castration anxiety) threatens the individual. Then, what was originally an external threat becomes an *internalized threat*. The individual is now afraid of his own impulses since their expression is opposed by his own prohibitions (superego) or by the still all-powerful parents, whose love and support may be lost. The possible range of suitable alternative behaviors becomes limited, stereotyped, and defensive. In turn, such behavior limits further appropriate learning, and the anxiety tends to increase. It may be channeled into symptomatic behavior. This is the nuclear core of the neurosis.

Freud suggested that in neurosis the conflict is between id impulses and superego forces [62]. The ego is the battleground of the conflict, but the ego is not fragmented or destroyed. At the same time, neurosis prevents full participation of all the segments of the personality. The ego is limited in the possible range of its activities because the security of the individual is threatened by his unacceptable drives.

Hutt and Gibby have suggested six criteria of a psychoneurosis [1]. These are:

1. An inadequate resolution of basic and conflicting drives . . . leads to a dammed-up state which is manifested either as anxiety or as some persistent tension condition.
2. There is an eruption of symptoms on a functional basis.
3. Certain persistent and inappropriate defenses are used to permit partial discharge of impulses.
4. There is reduced effectiveness and impairment of some functions.
5. There is a high degree of irrational repetitiveness in the pattern of behavior, even when it is clearly inappropriate to the situation.

6. The neurotic lacks insight into the true causes of his conflict. Hence he often "displaces," "rationalizes," or "reaction forms."

It is possible to classify the psychoneurotic reactions into three main categories on the basis of the nature of the "ego boundary" of the condition. (See Figure 6.4.) By "ego boundary"
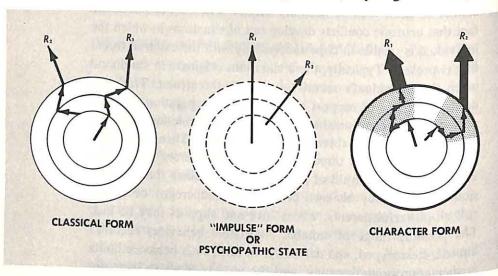
FIGURE 6.4   *Three categories of psychoneuroses.*

is meant the nature of the system of internal controls through which the expression of impulses is permitted or inhibited. The sensed feelings of such controls enable a person to distinguish between internal needs and external demands—hence, a "boundary." In the "classical forms" of the neuroses, such as anxiety neurosis and conversion hysteria, anxiety is displaced into certain symptoms, but the ego permits the expression of many impulses, at least indirectly. The person experiences some degree of conflict. The ego boundary is well defined in such conditions.

A second category of neurotic conditions includes the "impulse neuroses" and the "psychopathic states"—as in cases of pyromania (fire-setting) and some kinds of sexually deviant behavior (such as nymphomania). In such conditions, the impulse is *acted out*. It is not inhibited or integrated into appropriate patterns of behavior by ego mechanisms. In these cases, impulses are not "experienced" or sensed by the person, anxiety is not experienced, and there usually is no real sense of conflict. Nevertheless, the ego is still reasonably intact. The person is aware of reality and of the nature of his behavior.

The third general form of neurosis is that of the "character disorders." In these instances there is an "armoring of the ego"— a phrase coined by Reich [63]. The patient may seem to be composed and effective, yet he feels somehow troubled. He does not experience internal conflict but is aware that something is wrong. His behavior is overly rigid; he has developed certain excessive character traits, of which he is not fully cognizant. Sometimes such people are constantly aggressive but don't "know" it. Usually, they are not capable of spontaneous feeling. They tend to act as wholes and are not especially sensitive to the impact of external conditions. The "character armor" makes them impervious to many events of everyday life. They are, therefore, characterized as "ego syntonic," i.e., they do not experience much anxiety. Although ego functions are distorted, as in the other forms of neurosis, they are essentially intact.

SOME EXAMPLES OF NEUROTIC PATTERNS   We shall discuss a few neurotic patterns in order to provide some "feel" for the phenomena and to illustrate certain mechanisms and symptoms.

Hysteria   This neurosis deserves primary attention because it has been studied exhaustively and because it illustrates so vividly some of the mechanisms underlying the symptom-formation of all the neuroses. One of the writers had occasion to treat the hysteric discussed below.

When the patient was first seen, his most distressing symptom was an inability to use his right hand in any form of writing, although there was little disability in the use of this hand in other functions. This symptom distressed him particularly because he was unable to sign checks and other documents. Both of these difficulties embarrassed him since he was often called upon to sign his name in public as part of his usual business activities. Neurological examination was essentially negative, and all other medical conditions were essentially normal.

This 38-year-old married man was a model husband and had been a highly effective executive in business. He was a man of high moral standards, devoted to his wife and family, and had had no prior obvious neurotic symptoms.

In the course of his psychotherapy, it became clear that the symptom had first occurred some 17 months earlier, when he was on a business trip and had occasion to sign a hotel register. Even this memory had been forgotten. What was even more surprising, he had forgotten all the details of that situation—the particular hotel, the nature of the situation at the time, and the events immediately preceding and following the outbreak of the

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symptom. In other words, his repression had been very effective in blotting out the circumstances of the *precipitating situation.* Still later in psychotherapy he was able to reconstruct the development of his symptoms. At first he had felt only a little numbness in his hand, with slight attendant difficulty in writing on some occasions. Later he became unable to sign hotel registers and experienced considerable anxiety about this. Still later he became unable to sign checks, but his anxiety was no longer as intense as it had been. In fact, although he was embarrassed by his disability, he was rather bland in discussing it.

The major aspects of the underlying psychodynamics, as they were gradually reconstructed, were that he had, for some time, had vague fantasies about having an affair with an unmarried woman who reminded him of his mother, but he fought against such wishes. Later, at the hotel where his symptom first developed, he was intensely driven to have an affair with another woman. This woman also seemed to him to resemble his mother. Thoughts about his sudden inability to sign the hotel register preoccupied him, however, and excluded his thoughts about having an affair.

He had been an only child and was emotionally tied to his mother. She had apparently had an unconsciously "seductive" relationship with her son but had brought him up under conditions of very strict morality. His mother had died about a year before he began to have thoughts about an extramarital affair.

In summary, he had experienced an intense oedipal complex involving his mother and had subsequently repressed his sexual strivings, first toward his mother and later toward other women. (He was usually impotent with his wife.) After his mother's death, there was a breakthrough of forbidden sexual impulses. The conflict was "resolved" by the "conversion reaction" of paralysis of his right hand, which symbolically expressed a prohibition of his sexual wishes. His symptom offered him some relief from his conflicts and brought him the concern of others for his welfare.

This brief case summary contains all of the usual elements found in hysteria. There is fixation at the oedipal level of development, with failure to attain adult genital functions. There is a massive repression of the oedipal "material." Subsequently, when triggered off by some traumatic event, there is a release of impulse and of defensive behaviors accompanied by the formation of the hysterical symptom. When treated successfully by psychotherapy (to which this condition lends itself fairly readily), the oedipal complex is resolved and symptom formation is no longer necessary. This case also clearly portrays the *secondary gain* which the illness provides. The neurosis requires that others treat or help the individual who has become
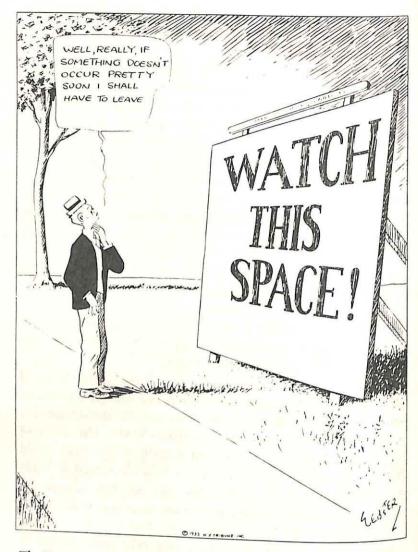
"disabled," while the conflict is unconsciously avoided. The *displacement* of the conflict to a *symbolic manifestation* is also demonstrated.

We stated, above, that hysteria has been more exhaustively studied than any other psychoneurosis. It was known during the age of Pericles, and the term used by the Greeks to describe it, "hysteria," literally means a "wandering of the womb." Thus, hysteria was thought to be a sexual disturbance. Much later, with the development of the biological sciences in the nineteenth century, it was thought to represent some disease of the brain [64]. However, the work of Charcot, and particularly of Janet, in the latter part of that century, who utilized hypnosis to study hysteria, offered evidence that the condition was primarily psychogenic in origin. The use of hypnosis and the re-experiencing of the conflict situation or the use of suggestion could produce alleviation or removal of the symptoms. It remained for Freud and Breuer to propose a theoretical explanation of this condition [65]. Freud showed how psychoanalysis, through the uncovering of emotionally charged memories which had been repressed, could bring about a cure.

In recent years some additional elaborations of the theory of this phenomenon have been developed. For example, Fairbairn states that an outstanding feature of hysteria is "the substitution of a bodily state for a personal problem" [66]. The effect of environmental conditions has been studied. It has been noted that the "classical" forms of hysteria have decreased in some sections of the world, presumably due to changed cultural conditions, and especially the greater tolerance for sexuality and its public discussion [67].

Since the symptoms of hysteria may take many forms, it might be worth considering the possibility that some of the reported decrease in the incidence of "classical hysteria" is more apparent than real. Current forms of the illness may be less obvious than previous ones. With increased sophistication, people may not as easily be capable of expressing their conflicts through gross and obvious symptoms. The major forms of the illness involve physical symptoms (sensory, visceral, or motor disturbances which can take on symbolic meanings) and psychological symptoms (such as amnesia, or loss of memory, hallucinations, somnabulistic behavior, or sleepwalking).

We shall not discuss some of the other types of "classical" psychoneuroses, such as anxiety reactions, phobias, obsessive-

The Timid Soul. Cartoon by H. T. Webster,
courtesy Mrs. H. T. Webster

compulsive reactions, and hypochondriasis (neurotic complaints about the state of one's health). While these differ in some important respects from hysteria, they are essentially similar to it. (Other "classical" neuroses differ especially with respect to the severity of the regression, the amount of overt anxiety, and the types of defense mechanisms employed.) Instead, we shall discuss character disorders and the psychopathic states. These are ego disturbances different from hysteria.

Character disorders Such conditions are often the most
difficult of the psychoneuroses for the student to understand.

There are no bizarre or striking symptoms, and frequently the character neurotic is able to function with a reasonable degree of effectiveness. Such individuals manifest, instead, a gross exaggeration of some trait, or group of traits, employed in almost all situations. One example is that of Casper Milquetoast, that is, a person with greatly exaggerated tendencies to be passive and submissive. Another example is that of the "bull in the china shop." Both types are fair approximations of character disorders. They are like caricatures of normal people in whom a particular characterological tendency predominates. Horney has given us some incisive analyses of such people and the traits they are likely to display in contemporary settings [68].

The following is an example of a character disorder. A man, about 42 years of age, was successful in his business ventures. However, he complained that his office help, and often his business associates, took advantage of him. He saw them as demanding, unco-operative, and often aggressive. He seemed to have great difficulty in obtaining their co-operation in business operations. It soon became apparent, in therapy, that he had a great deal of hostility of which he was unaware. He expressed this hostility in many *characterological* ways. He was overly assertive in most of his behavior, slammed doors, sat down and got up with excessive vigor, and demanded things rather than asked for them. At first he seemed to be unable to comprehend that these were hostile ways of behaving. Only after the therapist had gathered sufficient evidence of this kind of behavior, and only after the relationship in therapy had been firmly established, did the therapist call these and other examples to the patient's attention. Later he showed considerable anxiety when doing these things. Finally he realized how much counteraggression he engendered in others by his own style of behavior. After much "working-through" of the sources of the conflict causing the hostility (see Chapter 7), he began to find ways of responding that evoked co-operation instead of counteraggression from others.

How are we to understand this type of individual? In this case we can see that aggression is an overdetermined or exaggerated trait. It is expressed quite rigidly, without appropriate regard for the circumstances in which the individual finds himself. Psychoanalytic theory postulates that chronic character defects result from massive fixation at a particular developmental (libidinal) level. In our case, the facts that support this view are that this individual was raised by a highly moral, punitive, and compulsive mother. As a child, during the anal phase of his development, very strict and excessive measures
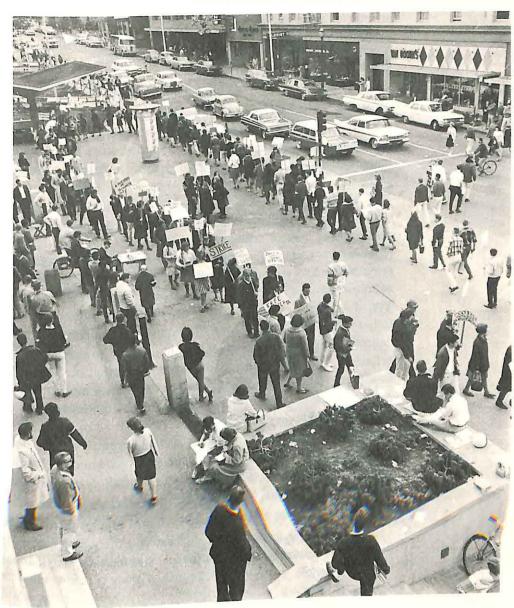
were employed in his "toilet training." As a result of these and other circumstances at the time, he was fixated at the anal stage of development. He developed to an excess those "modes of anality" which included stubbornness, rigidity in behavior, "demandingness," and other aggressive characteristics. Moreover, these traits became *ego syntonic,* i.e., they operated without any significant degree of awareness and without internal conflict over their manifestation. And, finally, the expression of this behavior was not accompanied by anxiety, although there was anxiety over their indirect effect. There was considerable anxiety later, in therapy, when the patient attempted to change them.

Freud believed that characterological traits were largely the result of libidinal fixations, although he allowed room in his theory for other factors [69]. Neurotic character formation was different from normal character development only in the degree of rigidity with which some character traits were employed. In character neurosis, as in all neuroses, there was basic conflict between ego and superego forces, but the excessive development of particular traits was seen as a defense against anxiety, so that other symptoms were no longer needed.

Abraham [70], and later Reich [71], studied character neurosis more penetratingly and offered additional dynamic explanations as well as new nosological groupings of various character types. In more recent years, Horney emphasized cultural factors in the development of character problems and grouped character tendencies into three main categories: *aggression (moving against people), detachment (moving away from people), and compliance* (moving toward people) [68]. These are regarded as normal traits when they are present and are used appropriately and flexibly. In character neurotics, however, a single one of these characteristics dominates the individual's behavior and is employed as a defense against highly reinforced impulses.

Others have suggested modifications of this grouping. Riesman, using a social-psychological approach, speaks of inner-directed people, outer-directed people, and tradition-directed people [72]. Fromm, a psychiatrist who followed Sullivan's theoretical orientation, suggests five character groupings: marketing, productive, hoarding, receptive, and exploitative [73]. The emphasis on social-cultural factors is clearly apparent.

Psychoanalysts prefer a grouping which is closely linked to the theory of libido and which is in accord with the nature of traits presumed to be linked to fixations. Thus we find: the *oral*

Protest: involvement and detachment. Wide World

character (one with fixation during this period of development and showing an excess of narcissism); the *anal* character (with fixation at this level, with compulsive and sadistic traits); the *genital* character (with fixation at this level, accompanied by hysterical traits).

Whatever the cultural influences, character disorders may be thought of as neuroses in which the exaggeration of some characterological trend is fixated. Through repression, in an

attempt to ward off excessive anxiety, the individual develops pathological ways of behaving. Instead of developing acute symptoms, he overdevelops certain characterological trends. This occurs through identification with the person (and his personal and culturally reinforced characteristics) who poses the threat. Other defenses, such as reaction formation, isolation of affect, and undoing are employed to ward off the anxiety, and the person learns to employ his overlearned traits rigidly and inappropriately. He may, however, use them to advantage some of the time.

Psychopathic states   One of the most intriguing, and at the same time most baffling, conditions is that of the psychopathic states. When a man with good intelligence, full awareness of moral issues, and with an apparently fine background engages in some outlandish criminal behavior, we may look for the explanation in terms of some psychotic or psychoneurotic condition. Yet, if he has no delusions, is in good contact with reality, is fully aware of his conduct, and has no manifest anxiety or other neurotic symptoms, we may feel at a loss to explain his behavior. And, so may he! Experts may agree that he does not fit the psychotic or neurotic criteria, yet they may be unable to agree on the nature of his problem. This is precisely the dilemma that *psychopaths* present.

The term psychopath is not as widely accepted by mental health workers today as it was some two decades ago. It fell into disrepute because it had become a catchall category for a wide variety of vague, ill-understood, and undiagnosable conditions. But it has its champions [74], and if employed with care has certain advantages, as we shall see shortly. As used here, it refers to disturbed behavior which has certain outstanding characteristics:

1. The person acts upon an unknown (to him) impulse, despite the fact that he is fully aware that his act is immoral, antisocial, or inappropriate. Often he feels that he can't prevent himself from engaging in the act.
2. The person acts in callous disregard of the needs of others but is fully aware that he may be hurting others very badly.
3. His antisocial behavior is characterized by irresponsibility.
4. The person is incapable of prolonged and deep interpersonal relationships, although he may be able to maintain such relationships for short periods of time.

5. He does not appear to be able to profit from his experience; that is, although he "knows" what is right, he fails to behave morally, except when it is convenient for him.
6. He expresses no anxiety or conflict about his behavior.

These criteria suggest that we are describing an individual with a psychoneurotic disorder whose major characteristic is impairment of *impulse control*. Some workers in the mental health field prefer the terms "impulse neurosis" and "character neurosis" [75] to "psychopathic states." At any rate, like the character disorder we have discussed in the previous section, there is a defect in the ego, but in this case there is no "armoring" of the ego. Instead, the ego is *excessively permeable*—impulses get through without being experienced by the ego. Hence, unlike other types of neurosis, there is no internal conflict. There *seem to be* no antagonistic sets of impulses from ego and superego. Psychopathic states appear to be more like neuroses than psychoses, in that the individual is disturbed but is not irrational. They do not present the severe regression or fragmentation of ego that is shown in psychoses.

In the official classification proposed by the American Psychiatric Association, the grouping for psychopathic states has been replaced by the category Personality Disorder [8]. This is a very broad grouping of many diverse disturbances, including unstable personality, sexual deviates, alcoholic addiction, speech disturbances, and somnambulism. The person with the condition we have described above as psychopathic would fall within this general category and would be placed within the subgroup designated as "Sociopathic personality disturbance, Antisocial reaction." Thus, this condition is seen as highlighted by antisocial behavior which is *socially unhealthy*. We are treating the condition as one of the subcategories of neuroses, instead, because it more nearly fits the criteria of neurosis than any other category.

Many kinds of behavior can be called psychopathic. Often types of homicide and some types of sexual deviation may also be included. In short, any problem in impulse control that meets the tests we have suggested might be included. In the title of his interesting account of the treatment of such an individual, Linder appropriately called it "Rebel Without a Cause" [76].

And what of the etiology of such conditions? Genetic, psychogenic, and cultural explanations have been offered. The

argument for hereditary factors has been documented by New-kirk [77], but most workers in the field are reluctant to accept this kind of explanation for most psychopathic states. In many cases, evidence has been adduced which purportedly shows the great importance of either (*a*) severe trauma in very early childhood or (*b*) early "spoiling" (overprotection) by parents. In others, sociocultural facts have been highlighted [78]. It is possible that, in different cases, different factors are responsible. In other words, since we are dealing with a complex pattern of symptoms, the same general type of behavior might conceivably represent quite different developmental conditions.

Psychopaths are notoriously difficult to treat successfully by the usual psychotherapeutic methods. They sometimes appear to improve in the course of psychotherapy but subsequently regress without apparent reason. However, some patients have been treated successfully and have maintained their improved status for indefinite periods. Treatment is perhaps most success-ful when it is given early (in childhood or adolescence) and when it involves both intensive individual psychotherapy plus group or environmental therapy (see Chapter 7). Fascinating accounts of such programs are contained in books by the Mc-Cords [79] and by Redl and Wineman [80].

The Integrated Personality

Now that we have examined some illustrations of psychoses and neuroses, have considered the dynamic features which charac-terize them, and have discussed etiological factors, we are in a good position to evaluate the nature of "normal behavior." As might be guessed, it is easier to give examples of and criteria for psychopathology than to define normality.

We should begin by emphasizing that normal behavior is not synonymous with conventional or socially accepted behavior. There is a difference between a "rebel without a cause" and a "rebel with a cause." The mature and creative adult seeks to better his own life and the lives of those around him. He is constantly exploring the reasons for the status quo and seeks to improve upon it. Sometimes, in expressing his creativity and individuality, he may run afoul of the conventions. He may be scorned or even reviled, and he will certainly often be misunder-

stood, yet he may be far healthier than those around him. In short, unique or nonconventional behavior is not necessarily pathological. It may even be healthy.

It is for such reasons that the term *adjustment* has fallen into disrepute. To many psychologists, the term implies acceptance of the social norms as the major criterion of mental health. In this sense, adjustment might mean the subordination of one's own needs in order to conform. Depending upon circumstances, conformity may or may not be appropriate. Of course, if we are to have any kind of reasonable social order, there must be some degree of subordination of self to society's needs. The real question is how to achieve an effective social order without sacrificing man's quest for growth and individuality. Philosophers, politicians, and social scientists have been struggling with this problem for ages. It attains very high priority today when the mass media of communication and the rise of technocracy and automation operate to deny man's individuality and to deny him opportunity for adequate self-expression and self-fulfillment.
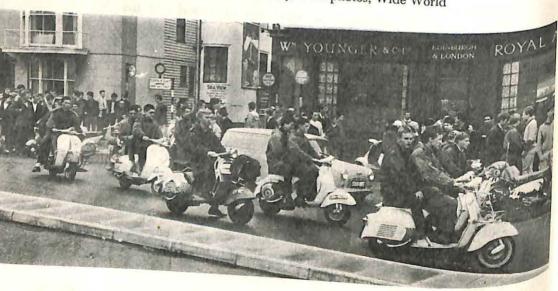
We shall use the terms "normal mental health" and "good adjustment" to imply a positive concept which encompasses the most complete possibilities for self-actualization and creative growth. And by contrast with the known conditions of mental illness or psychopathology, we shall try to understand the nature of good mental health. We prefer a definition of the mature person as one who has an *integrated personality,* that is, one who has the capacities for integrating his many inner functions with reality and is able to actualize his potentialities.

Perhaps we shall have to accept the premise that there is no single set of criteria of good mental health. We may wish to agree with Hartmann, a psychoanalyst, who says that "the theoretical standards of health are usually *too narrow* [italics ours] insofar as they underestimate the great diversity of types which in practice pass as health . . ." [81]. Or we might conclude that people can be mentally healthy in some respects but unhealthy in others—that the ideal of complete mental health is only an ideal, and that the degree of mental health is only relative.

TRANSIENT MALADJUSTMENT We have seen that the mere presence of certain symptoms does not necessarily imply that the person is suffering from some form of psychopathology. The

Conformity. Both photos, Wide World

mere absence of symptoms is, similarly, not a sufficient condition to characterize good mental health. Symptoms may occur in a healthy organism as the result of continued stress, and, when the stress is removed, the individual may be free of symptoms again. Even the healthiest organism reacts to the invasion of physical or psychological stress by some *temporary regression* and dysfunction.

Children go through various stages of temporary dysfunction during normal development. During such periods they may be attempting new roles for themselves, as when they leave the stage of infantile dependence and begin to assume some degree of volitional independence [82]. Such periods are normal during the oedipal phase of development, during the early stages of adolescence, and during the later stages of aging. These are ubiquitous phenomena which characterize most, if not all, cultures and peoples.

Hutt and Gibby [1] have labeled such temporary developmental dysfunctions *transient adaptive problems*. They delineate six major types of such temporary maladaptations: (1) those associated with growth; (2) those associated with unevenness in development; (3) those associated with physical illness or disease; (4) those associated with environmental stress; (5) those associated with cultural practice or conflict; and (6) those associated with exceptional capacities.

Temporary dysfunction may be produced by means of biochemical manipulations or by means of temporary, although extreme, stress. Biochemical stress may be induced experimentally by the administration of lysergic acid diethylamide (LSD). In normal persons the drug-induced effect is similar in many respects to the acute symptoms of schizophrenia. They experience severe disturbances in thinking, perception, and feeling. People show wide variations in some specific aspects of the reaction, presumably due to the previous state of the person's defense patterns. Some develop delusional thinking, some lose their sense of self-identity, and some experience peculiar feelings of "depersonalization" (a loss in self-identity). Anxiety seems to be increased markedly in most cases. After a few hours the drug-induced "regression" disappears and normal functions return. One hypothesis to explain these effects is that stimulation of the adrenal glands by drugs increases the activity of the adrenal-pituitary system. In turn, this might render the adrenal cortex resistant to normal activity for a period of time. Other mechanisms which

produce these effects have been suggested. A study by Rinkel and co-workers describes these phenomena [83].

Studies such as these suggest that in schizophrenics the pituitary-adrenal system may be defective. Since similar effects can be produced without specific chemical stimulation in normal individuals, such as in cases of severe situational stress, in war conditions [84], or in sensory-deprivation experiments [85], we may conclude that the arousal of severe anxiety is a central and significant factor. Such results are compatible with the psychogenic theories relating anxiety to the development of schizophrenia, but they do not rule out the significance of constitutional factors in other cases.

An analysis of all types of transient maladaptive behavior suggests that psychogenic factors are responsible for the onset of acute symptomatology in many types of neuroses and psychoses. When such stresses are persistent, due to external circumstances, or when they occur at *critical periods,* their effects may tend to be irreversible. Even structural, bodily changes may occur which make reversal of the regressive trend difficult. A person's resistance to prolonged effects of such conditions depends upon his previously learned defense patterns as well as upon his immediate vulnerability to such conditions.

Such considerations suggest that normality may, in fact, be a matter of the degree of internal integration of the personality functions which prevents further disorganization, even though temporarily acute dysfunction may occur under severe stress. They do not, however, eliminate the possible contribution of such other factors as constitutional predispositions, which may be significant in some cases.

NORMAL MENTAL HEALTH As we have seen, conceptions of good mental health can vary widely. At this stage of our knowledge, Smith's suggestion that empirical research is needed to determine more precisely what combinations of factors are optimal under given conditions is highly pertinent [86]. Rejecting the view that all possible factors predisposing toward good mental health should necessarily be maximized in everyone, he believes that some of these factors can vary inversely under certain conditions. In other words, various combinations of factors might be most beneficial under differing circumstances. He assumes an underlying unitary function, so that excessive development of one set of "healthful" factors may actually

impede over-all optimal mental health development, since less energy is available for developing other functions. Hence, the *pattern* of development that is optimal needs to be evaluated, rather than maximum development of each possible factor. This view does not rule out the possibility that certain factors may be more basic than others.

We shall have to be content, for the moment, with a consideration of some of the important criteria of good mental health. Nevertheless, we have seen the critical importance of the concepts of integration and disintegration. Whatever weight we may finally assign to the factors discussed below, the healthy personality must have an integration in its over-all functioning so that it does not become persistently fragmented under internal or external stress. Now, let us examine six proposed criteria of mental health.

Deep emotional cathexis   The threat of rejection, as we have learned, is crucial in creating damaging conditions which may lead to psychopathology. Man needs to know that he is loved, and is capable of loving, not only as an antidote to threats of rejection and feelings of aloneness, but as a condition for satisfying what is perhaps the essence of "the human condition." The infant is narcissistic in orientation and in behavior and is utterly dependent upon others for existence and for gratification of his psychological needs. The mature adult has internalized the love of others. He has learned to love both himself and others. He has learned to feel that the needs of others are as important as his own. And in the process, he has developed a stable and secure self-image. Even when he still suffers because of the loss of a loved one (i.e., as in depression or mourning), he "recovers" because of this stability in his self-identity.
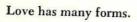
Fromm defines mature love as follows [87]: "Love is union with somebody, or something, outside oneself, under the condition of retaining the separateness and integrity of one's own self." Freud conceived of genital maturity in much the same way and saw the successive stages in the individual's capacity to relate as primary for optimal psychological development. In the developmental struggle to attain this goal, the individual learns to master anxiety, to cope with reality, and to express himself in a harmonious interplay of emotions, perceptions, and cognition.

Deep emotional cathexis, involving attachment of libido to other persons or objects, requires the investment of oneself in

Love has many forms.

another person on a reciprocal basis. It is not the same thing as the capacity for "joining" groups, which may often be used as a defense against feelings of aloneness and rejection. Nor does it simply involve the "role-playing" of liking someone (we have seen how the psychopath "role-plays" liking someone but does not love him). It does not permit unrealistic suspiciousness and anxiety (as in the cases of schizophrenia and hysteria, respectively) to inhibit effective relations with others.

Certain cultures place a pre-eminence upon self-reliance [89]. Self-reliance can easily be carried to excess, however. It can result in becoming insulated from others. More than this, when carried to excess, it can prevent the true development of autonomy. It may produce rigid adherence to outworn beliefs or practices. True autonomy requires realistic self-regard and appropriate acceptance of responsibility, while, at the same time, it requires capacity for sensitivity to the needs, suggestions, and admonitions of others. The autonomous person reflects a balance of passivity and assertiveness. He is inner-directed, but he is responsive.

Autonomy, viewed in this manner, may be a by-product of the capacity for deep emotional cathexis. In turn, it leads to other primary traits, such as we have discussed in Chapter 5.

Capacity for spontaneity   Closely related to the above qualities is the capacity for spontaneity. As Maslow has shown, when people are able to relate to others and are also capable of autonomy, they are capable of spontaneous and creative behavior [89]. Spontaneity, as here conceived, is synonymous with the capacity for flexible and appropriate adaptation to changing circumstances. It requires adequate self-discipline, sufficient emotional security, and flexibility of response (rather than impulsiveness).

We have seen that the essence of the neurotic reaction is that of irrational repetition. In turn, this rigidity in behavior results from excessive anxiety. In the spontaneous individual, the security system is such that either he does not develop excessive anxiety, or he is able to discharge it effectively.

Capacity for tolerating anxiety   There is probably an optimal level of anxiety for each individual at his particular stage of development that maximizes his growth and performance. We have seen how important anxiety is in adjustment and development. The healthy adult can be conceived as having either (*a*) a high tolerance for anxiety or (*b*) a low level of inappropriate anxiety—or both.

The individual who was overprotected in early life may, if conditions remain favorable, be able to avoid excessive anxiety reactions. But he may not learn to deal effectively with anxiety. Hence, when he meets external stress or severe internal conflict, he has no readily available techniques for dealing with the sudden emergence of severe anxiety reactions.

On the other hand, the individual who has learned to cope with anxiety reactions under secure emotional conditions is more able to tolerate sudden stresses and conflicts. He is more able to cope with the problems which confront him. Furthermore, he is able to perceive reality more accurately, avoid problems which he is unable to cope with, and find effective ways of meeting his needs without endangering the integrity of his personality.

Capacity for self-insight   Little children can usually tell us what "troubles them inside"; many adults have great difficulty in doing so. We have seen how the individual with a character neurosis has difficulty in perceiving that many of his problems "stem from within." Most neurotics have difficulty in determining precisely what it is within themselves that bothers them, although they may be fully aware that they are internally troubled and even that their symptoms are the result of psychological conflict. Some psychotics, on the other hand, seem to have an excessive awareness of "unconscious material." But in none of the phenomena of psychopathology is there an adequate capacity for self-insight. Conflicts either have to be repressed, or, if this fails, the impulses have to be acted out directly or symbolically.

The healthy, integrated adult, on the other hand, is capable of looking *within* as well as *without* with little defensiveness. Usually he is aware of his feelings and is aware of the causes of his behavior. He is also realistically aware of his shortcomings and is able to recognize that, sometimes, something bothers him of which he is unaware. But he does not project the cause of his discomfort upon others. It is this quality of self-awareness, perhaps more than any other, which makes the healthy adult seem rational.

Capacity for empathy with others   The ability to know how others feel may not seem very important to the sophisticated intellectual or to the egocentric individual. Yet without this capacity, he is deprived of a considerable body of knowledge— knowledge of others in the human race. This capacity for

identifying emotionally with others probably stems from secure emotional relationships in infancy and early childhood. Identification with an emotionally warm and responsive person enables one to learn how to empathize with others.

Effective social adaptation requires that we realistically perceive how others about us feel. Otherwise we, too, may become a "bull in a china shop." Capacity for empathy may also reinforce one's own security, since it provides opportunity not only for realistic perceptions of others but appropriate adaptation to them. As a result, the probability of positive feedback to, and obtaining accurate information about, oneself is heightened.

Capacity for self-actualization The concept of self-actualization is as old as philosophy itself, perhaps older. It refers to the capacity of the organism to grow, to develop, and to function more efficiently. In modern conceptions of mental health, the concept is differentiated into two motivational components [90]. One component has to do with *deficiency motivation,* i.e., motivation to assure security, belongingness, and self-esteem. These stem from deficits in an individual's interaction with others. Such forces tend to prevent the development of psychopathology in all people. They assist in the therapeutic process of reintegration of the personality when it has become disorganized. The other component involves *growth motivation,* not based on prior deficits. This component leads to self-actualization to the highest degree of which the individual is capable. It is reflected by an ever increasing self-effectiveness rather than by resignation to apathy. Perhaps an even more important aspect of the growth motives is that they are experienced as pleasurable and nonthreatening.

Probably, growth motivation is closely related to the development of conscience and ego-ideal, since it has to do with the development and maintenance of distant goals. The mentally healthy person strives to achieve higher accomplishments, but not because of a neurotic anxiety to be accepted and not out of feelings of desperation and inadequacy. Rather, he experiences positive satisfaction in the growth process itself. Such a person can be said to be more motivated by an intrinsic orientation than by external, extrinsic demands. At an optimal level, development of the capacity for self-actualization produces an individual with very high, sometimes even lofty ideals, and this is a characteristic of our best leaders in all walks of life.

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SEVEN   REORGANIZATION OF THE PERSONALITY

We have referred at several points in the previous chapters to various methods of treatment used to provide some relief from excessive anxiety, behavioral difficulties, and symptoms. Now we shall discuss some of the salient features of various approaches to treatment and evaluate the present status of such methods.

Treatment methods may be classified in terms of the *therapeutic mode*, such as *somatic* or *psychological*, or they may be classified in terms of the *basic unit* for therapeutic intervention, such as *individual* or *group*. They may be subdivided further in terms of the kind of psychological treatment that is provided. We shall begin our discussion by considering some illustrations

of psychotherapy for individuals. Then we shall proceed to psychotherapy applied to groups of people. Finally we shall consider some aspects of somatic treatment.

Commonalities in Diverse Forms of Psychotherapy

All forms of individual psychotherapy have in common the aim of assisting the individual to lead a more effective life and to reduce the ravages or impairment caused by the psychopathology. Although they may differ considerably in some respects, they attempt to help the person function at a higher level of efficiency or with less discomfort. Sometimes the aim is not only to assist the individual but to protect society from the real or imagined dangers which the individual's behavior presents. This point should be emphasized because society's needs, as distinguished from the individual's, cause difficulties for the therapist —sometimes in quite subtle ways.
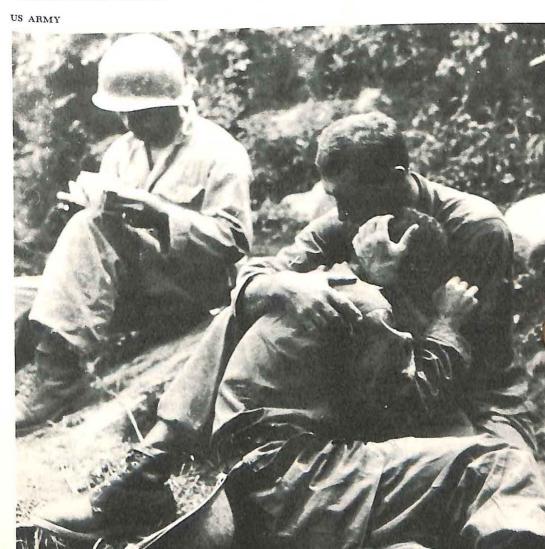
As we have seen in preceding chapters, society is not always willing to tolerate individualistic expression of a person's behavior, even though it is clearly not pathological. Society tries to protect its own security by requiring compliance with its conventions, mores, and laws. Although most people are able to accept this requirement, it often interferes with those who are "unconventional," "individualistic," or "radical." Many of these people are not psychologically disturbed, but their behavior threatens society. Of course it is also true that many persons rebel against society because of neurotic problems. In other words, not all unconventional and individualistic persons are "sick," but some are.

This complicated issue is directly relevant to the first commonality in all forms of psychotherapy. The primary obligation of the therapist—as distinguished from the policeman, the teacher, the parent, or the minister—is not to protect society but to assist the individual to maximize his potentialities, which are impaired by his mental malfunctioning. Thus, the therapist has a *unique role* in his therapeutic orientation. He must maintain an *amoral* (not immoral) attitude toward his patient's behavior. He must observe the behavior of the patient closely and understand it objectively. At the same time, he must assist the individual in resolving his conflicts and achieving greater personal and social effectiveness. He cannot *judge* or seek to

Normal roles can be shifted in extraordinary situations.

control. He cannot confuse his own role with the differing roles of the custodians of society's security. Yet, the therapist is a member of society himself and to some extent has interiorized its values. He is therefore likely to try to impose society's attitudes on the patient, even if unwittingly. Thus, each psychotherapist needs special training (some say he needs personal therapy or psychoanalysis) to sensitize himself to, and to deal effectively with, the patient's conflicts without imposing upon him the very moral directives that may have contributed to the patient's problems. Another way of stating this position is to indicate that the therapist must be trained to maintain his *integrity as a therapist,* in terms of the specific role he plays for his patient.

This position is not shared by all therapists. Some view the central problem in psychogenic illness as an insufficient development of conscience, and not as a conflict between superego and id. Such therapists view their function as one which requires the teaching or reinforcement of the major cultural values. Mowrer, for one, takes this position in conformity with his own views on personality development [1]. We shall have more to say about this viewpoint later in this chapter.

A second commonality in most forms of psychotherapy is the characteristic *relationship* which develops between patient and therapist. The psychotherapist seeks to establish a trusting, warm, and reciprocal relationship with his patient. Both enter the therapeutic situation with the common purpose of helping the patient to achieve more effective functioning. The patient expects that he can rely upon the therapist's skills, his understanding, and his support to assist him in gaining this objective. The therapist expects that the patient is motivated to achieve some behavioral changes and is willing to make some sacrifices to achieve this. Under favorable circumstances, these conditions prevail at the beginning of therapy. Even then, however, there are some negative aspects to the relationship. Although the patient is consciously motivated to change, he is also resistant to modifying his defenses and major adaptive techniques, since these have had a certain value for him. His disturbed behavior may have brought him certain secondary gains. Moreover, his preformed attitudes toward people are carried into the therapeutic relationship. He may have difficulty trusting people, or he may trust them naïvely. He may expect to become entirely dependent upon the therapist, or he may be unduly fearful of

any close relationship. He may even expect the therapist to perform some miracle or expect to be changed without having to experience any anxiety or discomfort.

As therapy progresses, the nature of the relationship often becomes much more complex. More and more of the patient's unconscious (or unknown) needs are projected on the therapist as the patient begins to feel more free in expressing them. He may expect the therapist to represent some unconscious ideal and feel disappointed when he learns that he is not perfect. He may demand more and more of the therapist's sympathy and tolerance. In psychoanalytic terms, this highly complex situation is termed *transference,* i.e., the patient transfers to the therapist all of his unconscious and unresolved needs and, to some degree, relives his old conflict within the therapeutic relationship—and, as in real life, consciously expects to be disappointed, rejected, humiliated, or otherwise frustrated.

Most therapists expect that, in the beginning, the emotional relationship will be an essentially positive one, so that there may be a good basis for initiating therapy. They also expect that the relationship will become more complex. Often the patient will become very hostile, demanding, and provocative. We shall have more to say about this phase of the relationship in subsequent discussion of psychoanalysis. Finally, in successful therapy, the complex, ambivalent relationship is resolved as it is worked through, and the patient learns to respond more objectively in terms of realities. Figure 7.1 shows the nature of the changing patient–therapist relationships during the course of psychotherapy.

A third commonality in almost all forms of psychotherapy involves the *emotional climate* of the therapeutic sessions. This commonality follows closely from the previous two points. The attempt is made to provide a *supportive, understanding,* and an accepting climate. This should help the patient to express his feelings and thoughts more freely, since these are received not only without moral judgement but also without rejecting the patient for having such characteristics. In turn, this usually helps to reduce the patient's anxiety and enables him to perceive more clearly both the nature of his inner conflicts as well as alternative ways of behaving. In other words, it is believed that this kind of climate helps to reduce anxiety and provide for the possible extinction of neurotic methods of responding.

A number of research studies have shown that this last factor

INITIAL PHASE	MIDDLE OR "TRANSFERENCE" PHASE	TERMINAL PHASE
P MOTIVATED FOR HELP P TRUSTS T P MAY HAVE SOME FEAR OR DISTRUST OF T	P HAS SOME POSITIVE FEELINGS FOR T P RELIVES OLD CONFLICT BY MASSIVE NEGATIVE PROJECTIONS ON T	P HAS REALISTICALLY BASED POSITIVE FEELINGS FOR T P IS ABLE TO SEE T OBJECTIVELY AND MAY SEE SOME LIMITATIONS
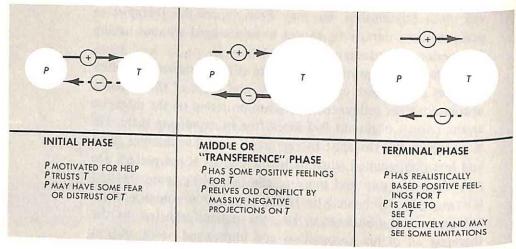
FIGURE 7.1 *The three typical phases during psychotherapy, with their varying patient-therapist relationships.*

has significance in reducing neurotic or other emotional conflicts and the concomitant symptomatic ways of responding. For example, in a study by Rioch and her colleagues, eight untrained married women were trained for a two-year period to provide, among other things, just such a climate for psychiatric patients. In characterizing their therapeutic technique, Rioch states, ". . . they pleasantly reassure, protect, and sympathize . . . " [2].

Although they did more than this, of course, these eight lay-therapists were trained to be sensitive to and accepting of their patients' verbalizations. Above all else, they were supportive. As judged by means of a series of criteria, they were able to provide as much therapeutic help as would have been expected from experienced, professional therapists. Rioch states, ". . . as therapists they have all performed some useful service to patients during this past year, and none of them has done anyone any harm."

Closely related to the above commonality in therapies is a fourth attribute of psychotherapy. Therapy provides an opportunity for *catharsis* and for *ventilation (or expression) of feelings*. Catharsis is the broader of the two terms. It refers to the emotional reliving of conflict-laden experience. Ventilation, on the other hand, refers to the opportunity for discharge of pent-up emotions, although there may be no actual "reliving" of the conflict. When such behaviors are permitted or encouraged in an emotionally accepting and supportive relationship, con-

flicts tend to be reduced, if not resolved, and neurotic patterns tend to become alleviated. Levy has shown that when conflicts are of recent origin, children can be greatly aided simply by encouraging them to re-experience the conflict in a *play situation* [3]. The technique involves providing suitable play and creative art materials by means of which the conflict situation

Play therapy. Irwin Cohen from Jewish Board of Guardians, New York

can be re-enacted and re-experienced under supportive, therapeutic conditions. Interpretation *need not* be offered in such circumstances. Many therapists believe that, for adults, the verbal expression of feelings, the discharge of the concomitant affect, and the response by the therapist which provides support and understanding (some call it empathic understanding) encourage therapeutic change and growth. Thus, Carl Rogers, who is the founder of the so-called "client-centered" school of therapy [4], Franz Alexander, who was a leader of the neo-Freudian school of psychoanalysis [5], and Wolpe, who is a leader in a form of behavior therapy which utilizes the learning principles involved in reciprocal inhibition[1] [6], accept this viewpoint and offer supporting evidence for it. (Of course, these therapists differ considerably in how they view the nature of the whole therapeutic process, as we shall see later.)

[1] See page 322 for a discussion of this term.

Two other characteristics of therapy which are not universal, but are nevertheless widespread, are *interpretation* and *insight*. The former term refers to the attempts made by the therapist to provide some degree of understanding of the nature of the patient's conflicts. Often some explanation of the causative factors in the development of these conflicts is also provided. "Insight" refers to increased awareness by the patient of the nature of his behavior and the underlying conflicts which generate it. Some therapists believe that insight, to be effective, must be not merely *intellectual* but *emotional,* i.e., accompanied by emotional reliving of some aspect of the conflict. Other therapists, like Rogers, decry the use of interpretive statements by the therapist, believing they only tend to impede the process of therapeutic change. However, Rogers, who favors simply reflecting the feeling being expressed by the patient, has been challenged by some who believe that any reflection of feeling involves at least some degree of interpretation. The therapist must interpret the communication by the patient, and he must attend to and select certain aspects of the communication. Moreover, the *way* in which he responds, whether by gesture and postural adjustments during the interview or by verbal communication, may implicitly suggest his own interpretations of what he has observed. Most therapists would agree that, in the complex interactions of therapy, the therapist is bound to provide some interpretative frame of reference and that, as a result, the patient gains some degree of insight into his problems.

"Uncovering" Psychotherapies

One broad classification of types of psychotherapy is that which is centrally characterized by its goal of "uncovering" the sources of conflict. Presumably this orientation is based on the assumption that "uncovering" is a necessary precursor to resolving conflicts. As we have implied in previous discussion, not all psychotherapies are equally directed to this goal. The aim may be more limited, such as eliminating objectionable symptoms or increasing the tolerance for frustration. In some forms of psychopathology, or at some points in the therapy of some patients, "uncovering" may be regarded as unwise or even dangerous. For example, when a patient is precariously holding

on to reality, as in incipient psychosis, the anxiety produced by further exposing the patient to painful conflicts may cause him to become dramatically worse.

Psychoanalysis may be regarded as a method of treatment which attempts to produce a profound reintegration of the personality as it eliminates the underlying psychopathology, and it is the classical model of "uncovering" psychotherapy. As a matter of fact, psychoanalysts of the Freudian persuasion often argue that their treatment is not psychotherapy at all. Psychoanalysis differs from other forms of treatment in that it attempts to uncover more deeply repressed material and emphasizes the analysis of the transference between the analyst and the patient. Of course, it follows the Feudian theory of personality development and psychopathology. We prefer to use the term psychotherapy for all forms of treatment, as does Kubie [7]. The aim of psychotherapy is improvement in the emotional adjustment of the individual by some form of specific psychological intervention.

Some of the other schools of psychotherapy which are based on differing theories of psychopathology and personality development (see Chapter 5), such as the Jungian, Rankian, Sullivanian, and Adlerian, also aim at uncovering unresolved conflicts and resolving them. In some cases, an even deeper type of uncovering may be attempted, as in Jungian analysis, which includes efforts to analyze the "collective unconscious" as well as the individual unconscious (see Chapter 5). In other schools of psychotherapy a more circumscribed type of analysis may be provided. Many of these focus the therapeutic analysis on current central conflict areas, that is, on the present difficulties of the patients. Thus far we have been referring to the schools of therapy which have diverged from classical psychoanalysis, i.e., to the neopsychoanalytic schools. Certain nonpsychoanalytic forms of psychotherapy also attempt to uncover internal conflicts, although their therapeutic approaches may rely upon quite different techniques. For example, client-centered psychotherapy, as developed by Carl Rogers [8], and Gestalt psychotherapy [9] are approaches based upon different theories. We shall examine some of these approaches in terms of therapeutic *technique* and therapeutic *process*.

FREUDIAN PSYCHOANALYSIS In the ideal case, when a full analysis is considered feasible, this form of psychoanalysis

attempts a highly ambitious goal: the uncovering of all major areas of repression and the reconstruction of the personality so that it can function with minimal use of defenses. Such an analysis typically requires more than two years of therapeutic work, more frequently three to five years. Sessions are held at least three times per week; more commonly there are five to six sessions per week. It can easily be seen that not all patients are sufficiently motivated or have adequate finances to engage in such an effort. A thorough Feudian psychoanalysis requires that the patient be motivated to engage in prolonged therapeutic work designed to do much more than merely make him more comfortable by eliminating some symptoms or learning to tolerate stress more easily.

After a relatively short "trial period," during which the patient and psychoanalyst evaluate the nature of the psychopathology and test the patient's suitability for analytic work, the formal analysis begins.[2] The patient is instructed to "tell everything that comes to mind" without censoring any thoughts or feelings, no matter how objectionable or embarrassing they may be. This is the Freudian principle of *free association.* When the patient attempts to follow this rule, he finds that this is an extraordinarily difficult task. He may be unable "to let go" of control of his thoughts, he finds it difficult to verbalize marginal thoughts and feelings, he may have to recount in obsessive manner all events occurring between sessions, and he may digress whenever he feels intense emotions beginning to develop.

In these and many other ways the patient manifests *resistance* to the uncovering process. Resistance is understood as evidence of the struggle of the patient in exposing to conscious awareness those painfully associated experiences which have been repressed. The main job of the analyst during this period is to help the patient learn to "free-associate" and to overcome his resistance. There are many techniques involved in this process, but essentially they involve the analyst's focusing on the evidence of the patient's resistance. In this process the analyst tries to help the patient become less "guarded" and less defensive. He assumes that the patient's motivation to be "cured," the nonthreatening climate of the therapeutic session, and sup-

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[2] Many modern psychoanalysts initiate psychoanalysis directly after the initial consultation(s) with the patient, without the formality of a "trial period."

port by the analyst during the process of uncovering will help the patient to become gradually more aware of his conflicting impulses and his "painful" repressions.

During this initial phase of the analysis, the patient learns that it is fully acceptable to express any feeling, no matter how abhorrent it may seem to be. He also learns that the analyst will *not* give advice or suggest better modes of behavior. Although the climate of the sessions is accepting and supportive, the analyst is essentially *passive* except when it is necessary for him to work through the patient's resistances. The patient often feels anxious: he does not know "where he is going"; he gets no active assistance in solving his dilemma; he finds the analyst is more or less like a *blank screen,* and this can be highly frustrating.

Quite often the patient becomes worse during this period. Not only does his anxiety increase, but he also *regresses* as more and more material from his childhood experiences is uncovered. Sometimes he "acts out" his impulses, that is, he engages in some forms of behavior toward his analyst or others before he has fully understood or integrated his conflicting impulses. In time, a *transference neurosis* develops. This is a situation in which the patient projects his unconscious fantasies upon the relatively "neutral" analyst. He may like his analyst, but he also experiences certain frustrating moments, as well. This means that the analyst is experienced as behaving like other important and frustrating people in his own life, typically his parents and other significant individuals. In this highly charged and ambivalent situation, the patient is able to experience vividly the repressed and conflictful material which his neurosis enabled him to ward off. At the same time, his current feelings, which actually are re-enactments of older experiences, provide basic material for the analyst and the patient to work on.

The next phase of the analysis then begins. The analyst now becomes much more active, offering interpretations when needed, to help focus and define ever more clearly and completely the areas of unconscious conflict. In this interpretative process, the analyst attempts to "peel off" the defensive layers, starting with those conflicts which are closest to awareness and then offering insights into more deeply repressed conflicts. In the course of this work, the Freudian analyst makes use of many kinds of evidence of the patient's "unconscious" conflicts,

e.g., dreams, slips of the tongue, "acting-out" behavior, and even postural and other physical behavior adjustments.

In the course of this interpretation, the "transference" is gradually worked through and the patient no longer has the need to project unresolved conflicts. Behavior is no longer dominated by irrational, unconscious needs. In short, psychoanalysis ends when "Where id was, ego now is," to slightly paraphrase one of Freud's dicta.

In addition to "resolving the transference," many, if not most, contemporary psychoanalysts deal extensively with the patient's ego problems [10]. In this process, problems of everyday functioning are analyzed in terms of the patient's patterns of defenses. Behavior is evaluated to determine the relative degree of independence which the patient has developed. Many other modifications in the terminal phases of psychoanalysis have been introduced in recent years [11].

Thus far we have presented the classical picture of psychoanalysis as it is applied in cases of psychoneuroses. There are many variations from this general strategy when other kinds of psychopathology are encountered. In cases of borderline psychosis and in fully developed psychotic conditions, some analysts attempt first to build up the strength of the patient's ego and his capacity for reality-testing [12]. Others, believing that there are deficiencies of a grave nature in superego functions of psychotics, may attempt to act as an alternative or supplementary superego [13]. But in all Freudian psychoanalytic work, the Freudian theory of personality development and of psychoanalysis is applied. To emphasize a few of the basic correlates, this involves: interpreting behavioral manifestations of the unconscious, using free association and related techniques to elicit and uncover repressed material, analysis of the transference situation, and, finally, assisting in development of healthy ego functions, especially in the latter stages of analysis.

Psychoanalysts claim their greatest therapeutic success for cases of hysteria, anxiety neurosis, and obsessive-compulsive neurosis [14]. As judged by their own criteria, they usually claim complete recovery, or substantial improvement, in about 60 percent of such cases. When slighter degrees of recovery are considered, the percentage of success is even higher. The relative success of this method of psychotherapy will be considered more fully in the section entitled "A Comparison of Various Forms of Psychotherapy."

OTHER ANALYTIC TYPES OF PSYCHOTHERAPY By way of illustration, we shall review briefly a few of the many variants of classical Freudian psychoanalysis and some aspects of neo-psychoanalytic therapy. Our aim is not to provide a comprehensive summary of each of these approaches but rather to document some principles and processes, as found in other therapies, which may differ from Freudian psychoanalysis.

Rankian psychotherapy Otto Rank was a member of Freud's closest coterie for a number of years. He broke with the Freudian group because of differences in regard to both personality theory and therapeutic strategy. In 1924, with the publication of his book *The Trauma of Birth* [15], he began to propose some basic differences from Freud's views. Chief among them at this time was his emphasis upon the importance of *separation anxiety,* which was exemplified by the birth process and the child's struggle to exist outside the mother's womb. Later, in his other writings, he indicated that the appropriate differentiation of the self from others, as a unique and secure individual, was the essence of the healthy personality. This enabled the person to function in a spontaneous and even creative manner. Central in this development was the early emergence of the infant's *will,* as it sought to express itself. The emergence of the will gradually enabled the self to become more fully differentiated as a separate structure. However, the expression of the child's will was frustrated by the physical and psychological realities (especially as represented by the mother), thus fostering the emergence of the *counter will.* When the expression of counter will is too harshly dealt with and is associated with guilt reactions, neurotic development is likely to result and the child learns to fear the loss of love excessively [16].

For these reasons, psychotherapy is seen as a clash of wills or a duel between patient and therapist. But the therapist, unlike the (neurotic) parent (or other important authority figures in the patient's life), *accepts* the expression of the patient's counter will as a positive force. The therapist does not deal with resistances by attempting to counter them or subdue the patient. Rather, resistance is seen as an attempt by the patient to express his individuality more fully. This leads to another shift in emphasis during the course of therapy. The therapist focuses on the *current interpersonal situation* as the most relevant datum for therapy. Historical uncovering is not only insignificant but is likely to lead to avoidance of the present emotional

relationship. What matters is how background experiences are dealt with here and now. The insight concerning past development is not the central task.

The therapist's *active task* is to be constantly alert to the current implications of the patient's emotional behavior. He seeks to accept the patient while at the same time helping him to become deeply aware of the meaning of his behavior. The therapist makes no effort, however, to change the patient; this would only encourage the reinforcement of counter will tendencies, and excessive counter will leads to neurotic difficulties. Although active interpretation is maintained throughout therapy, the patient is left free to do what he wishes about his behavior.

Two other points need emphasis in this short account of Rank's approach. One is that the *implicit meaning* of the patient's emotional reactions must be dealt with, and not merely the content of his communication. The other is that *separation anxiety* is considered the central theme from the initiation of therapy until its conclusion. In thus focusing on current feelings and the separation problem, Rankians believe that it is often possible to reduce the length of therapy to far less than the extended analysis found necessary by Freudians.

Vivid accounts of the nature of Rankian transactions may be found in two books. One, by Allen, describes in detail the therapeutic management of emotionally disturbed children [17]. Another, by Taft, discusses the application of Rankian principles to casework as it is carried out by psychiatric social workers [18]. Rank's formulations have had a profound impact upon therapists of many persuasions and have led to many therapeutic and social-psychological research studies.

Sullivanian psychotherapy   Another great figure in the psychotherapeutic world, regarded by some as second only to Freud, was Harry Stack Sullivan, a clinical psychiatrist. His theoretical formulations opened the door, even wider than did those of Rank, to clinical study and research concerning the specific influences of cultural factors on personality development and psychopathology and to the complex nature of interpersonal relations [19].

Sullivan divided the various human drives into two main groups: (1) the pursuit of *satisfactions* (the biological needs of man for survival) and (2) the pursuit of *security* (the psychological needs of belonging, acceptance, and feelings of well-

being). Frustration in the pursuit of security, caused by social conditions and by other persons who, because of their own emotional disturbances, are determiners of such conditions, is seen as the main determinant of psychopathology. In infancy, anxiety is experienced empathically and contagiously through contact with an overly anxious mother. Subsequently this anxiety may be reinforced by other types of frustrating social conditions. The development of excessive anxiety severely restricts the maturation of the *self-system* (i.e., the integrated patterns of coping with reality) as a secure and happy one. In order to maintain some degree of security, the individual develops pathological *self-dynamisms* (i.e., the "relatively enduring systems of energy transformations" by means of which the individual restricts the input of anxiety-laden information). But, in the process, he develops what Sullivan terms *parataxic reaction patterns*. These are patterns of perception in which the individual reacts to others not in terms of the reality of the others' behavior but rather in terms of *fantastic personifications* of others (these are similar to but broader than transference reactions). Psychopathology is thought to be, in the main, the result of excessive development of unrealistic perception, which, in turn, tends to preclude adequate reality-testing and self-correction of behavior.

Threats to the security system originating out of faulty interpersonal experiences result in two other types of pathological behavior reactions. The first of these is the self-dynamism of *selective inattention*. By this means the individual restricts awareness of anxiety-laden stimuli. Perception is focused on what is not painful, and that which is painful is denied awareness. In acute anxiety this dynamism is assisted by the process of *dissociation*, which is roughly equivalent to repression, thus causing gross distortion in one's awareness of the current reality.

Sullivan worked extensively with schizophrenics, although he was also greatly interested in obsessional cases. Thus, his clinical experience was in marked contrast with both Freud's and Rank's, who dealt extensively with psychoneurotics. Parenthetically, it may be noted that his work with hospitalized psychotics (rather than with nonhospitalized psychoneurotics) may have been partly responsible for the difference in his theoretical orientation from Freud's. Like Rank, he believed that the therapist had to be intensely active. But Sullivan also

believed that the therapist was more than an active and merely objective observer. He also was a *participating observer*. Not only was the patient's behavior to be analyzed during therapy, but the personality reactions of the therapist were grist for the same mill. The *interpersonal relations* between patient and therapist were the objects of scrutiny, and the reciprocal nature of these interactions was stressed. This meant that the therapist had responsibility in communicating relevant aspects of his own ideas and feelings to the patient.

Like Freud, Sullivan believed it was necessary for the therapist to be fully informed about the patient's previous psychological history. The therapist must be in a position to understand the origins of the patient's dissociations and selective inattention. However, therapy proceeded primarily on the basis of testing and correcting these maldeveloped dynamisms through the process of *consensual validation*. This meant that direct interpretations of examples of the patient's dissociations had to be offered and evaluated, thus leading to the relinquishment of pathologic security operations. Extensive use was made of the patient's *marginal thoughts* (passing and peripheral thoughts) during the interview sessions. The patient was encouraged to try to capture thoughts and feelings which were not directly in focus and to discuss dreams as means of demonstrating the nature of his distortions and helping to correct them. However, free association was not encouraged, since it was felt that much more decisive and direct data could be obtained by skillful use of the current interpersonal situation and directed questioning. Fromm-Reichmann, in her book on the application of these principles to what she terms intensive therapy, illustrates how this is done in a flexible manner consistent with the basic premises. [20].

This approach is reputed to be relatively successful for the types of patients Sullivan worked with. It has led to intensive research on the nature of interpersonal behavior [21] and to operational definition of many of the variables involved in such behavior. The use of consensual-validation methods in reducing anxiety has become an active area for current research efforts.

Adler's psychotherapy Alfred Adler, one of the early disciples of Freud and the first to break with him openly, presents a sharp contrast to the "schools" of psychoanalysis discussed thus far. By contrast with Freud, his theory of personality development seems naïvely simple. Giving little or no emphasis

to biological and hereditary factors, it places the major emphasis on the individual's *sense of inferiority* and on the healthy or neurotic ways in which the individual learns to deal with this problem. Yet, at the same time, Adler presents a paradox, for he was the first analyst to emphasize the *individual life-style*. This was conceived as the central problem for therapeutic analysis and as such laid the groundwork for *character analysis*. *Character analysis* involves examination of the patient's general modes of adaptation in contrast with *symptom analysis,* which focuses on specific behavioral disturbances. Adler's grasp of the concept of the *life-style,* as we shall see, was indeed profound and constituted the basis for a radically different type of therapeutic strategy. Fortunately, there is a penetrating restatement of Adler's theoretical premises and therapeutic approach in the book by the Ansbachers [22].

Adler believed that the struggle against feelings of inferiority was the keystone to the understanding of neurotic behavior, and not frustrations of the sexual drives. The human infant is, in fact, helpless for a long period of time and perceives himself as helpless and dependent. These feelings of helplessness may be reinforced by some actual physical inferiorities (diseases or defects) and by the environment, which may frustrate the individual. In dealing with these real and perceived inferiorities, the individual develops his own, unique style of life. Neurosis consists of substituting *fictitious goals* (i.e., unrealistic goals) and an abnormal style of behavior for a realistic set of goals and a healthy style. The central task of psychotherapy is not that of resolving specific conflicts but rather that of uncovering the neurotic life-style with its fictitious goals and teaching the patient to substitute another, more suitable set of goals. The patient is assisted in modifying his life-style. In this process, the patient must learn to have more *courage* in facing his reality problems and to develop more *common sense* in dealing with them. (Adler uses the two italicized words unabashedly.)

It should be emphasized that for Adlerians there is a *functional unity* of the whole individual. By means of careful diagnostic procedures (which Adler specified), and by means of such techniques as directly confronting the patient with specific evidence of his neurotic style and its inappropriate goals, the therapist attempts to re-educate the patient and encourage him in attempts at new modes of behavior. Social interest and participation are similarly encouraged. Analysis of the transfer-

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ence reactions of the patient to the therapist is not regarded as significant. The therapist uses his knowledge of the patient's neurotic style, and its causes, to teach him new ways of living and of coping with his real problems. In this whole program, uncovering of patterns of behavior is attempted, but specific attention is not directed to resolving repressions or to analyzing specific unconscious conflicts.

Although there are a considerable number of practicing therapists of Adlerian persuasion, relatively little research effort has been made to test their hypotheses. A shift in this direction may be detectable in recent years, however. One example of an Adlerian hypothesis which emphasizes the possibility of rapid diagnosis and rapid therapeutic change is that *consciously selected early memories* which the patient is asked to provide depict his current life-style and make possible predictions about his present behavior. This was tested by Berman, who was able to find evidence which confirmed it [23].

Nonanalytic and Behavioral Therapies

Let us now examine two examples of therapy which adopt a differing perspective of the nature of personality development and the strategy of treatment. The examples we shall discuss have little in common with each other except that, in both, little or no emphasis is given to unconscious factors in behavior. They have been greatly influenced by the orientation of experimental psychology and attempt to base their formulations on generally accepted principles of learning theory.

CLIENT-CENTERED THERAPY (ROGERS) Carl Rogers is a psychologist who was trained in educational psychology and in clinical counseling. Out of his clinical work, as well as his philosophical orientation toward life (he received training in liberal theology at the Union Theological Seminary), he approached psychotherapy (he first preferred the term "counseling") as a task to be shared by co-equals, the counselor and the "client" (as Rogers first called him). This approach emphasized *permissiveness* and *nondirectiveness* in the client-counselor relationship and was influenced by the Rankian conceptions of psychotherapy. It was also influenced by many other therapeutic theorists (notably Sullivan) and philosophers (notably John

Dewey). In the beginning, Rogers believed that no specific personality theory was responsible for his orientation, preferring to wait upon research data before offering his own theory [24]. Eleven years later, in 1951, he offered his first systematic attempt at such a formulation. It was based on a number of research studies dealing with different aspects of the client-centered approach [25]. In the early stages of his work, Rogers specified some necessary attributes of those clients whom his approach to therapy might benefit. It was assumed that not all clients were capable of profiting from this experience. The criteria used for selecting appropriate clients included: an adequate level of intelligence, freedom from family control, and absence of very severe emotional problems. As time passed and experience with the method and its research findings became available, Rogers chose to discount the significance of these or any other kinds of restrictive criteria. For the past several years he and his co-workers have worked intensively with schizophrenics, for example. However, it is still probably true that most Rogerian counselors treat college students in counseling bureaus and primarily attract moderately disturbed individuals whose emotional problems are centered in adjusting to academic work and the college situation.

Although the nature of client-centered therapy has changed over the past 25 years or so, in essence it has preserved certain characteristics. The client is aware of the need for change in his behavior because of a discrepancy between his self-concept and his perceived experience. The counselor provides an opportunity, in a permissive and shared relationship, for the client to express his feelings. The main therapeutic task is for the therapist to empathize as fully as possible with the client and to reflect or communicate this understanding to the client in an accepting manner. The therapist takes *no responsibility* for directing the client's feelings, perceptions, or other aspects of behavior. All of these are left up to the client. The client initiates therapy, continues it at his own pace, and terminates it when he feels ready to do so. The therapist does not attempt to diagnose, evaluate, or offer authoritative suggestions. Basically, he only reflects the feelings expressed by the client. He makes no conscious effort to interpret.

This apparently simple formula for therapeutic change does appear to work for some people [26]. It represents an extension to the therapeutic field of the general approach advocated by

theorists who maintain a phenomenological point of view [27]. In this view the individual's behavior is thought to be entirely determined by his own perceptions of his experiences, and it is therefore not necessary to understand any unconscious forces that are presumed to underlie behavior. What matters, exclusively, is how the person *experiences and perceives his world.*

Rogers holds that when the client-centered viewpoint is maintained, the individual's self-actualizing tendencies (his growth tendencies), which have been blocked or distorted, are released, and, consequently, change will occur. The change produces a closer fit between the person's view of himself and his perceptions of the environment. The faulty self-perception is corrected, and a harmonious and more integrated self-concept, consistent with one's experience, results. Then there is less discomfort and less need for defensive behavior. Figure 7.2 depicts the kind of change which is expected following successful client-centered therapy.

One of the most important contributions by Rogers and his followers was the initiation of their own extensive research program and the stimulation of research in the whole field of therapy. This group formulated relatively precise hypotheses about the nature of therapeutic changes that were expected and proceeded to test them. They made tape recordings of therapeutic sessions and thus were able to examine minutely many aspects of therapeutic interchanges and of changes reported by the client in self-percept. They were able to study the behavior of the therapist as well as that of the client. They analyzed many aspects of outcomes of the therapeutic process.

As illustrative of their research on therapy, a few examples may suffice. It has been possible to show that, when therapy was successful, as judged by objective criteria, there was change in the self-concept in the direction of greater congruence, as postulated [28]. Rogers and Dymond, in their volume summarizing both theory and research [26], were able to define certain necessary conditions for change and the sequential order in which these changes occurred. In a recent study on 28 cases seen in a college counseling center at Chicago, therapeutic change was found to be a function of the therapist's empathy for the patient, the patient's motivation to change, and the interaction of these variables [29]. Some aspects of these findings have been confirmed in research with schizophrenics [30], in which it was found that such patients, when treated by

BEFORE THERAPY | AFTER THERAPY

"HYPOTHETICAL" TRUE SELF

"BLOCKED" AND DISTORTED SELF

MARKEDLY IMPROVED SELF

KEY
■ BLOCKED AREAS OF PERSONALITY
R EFFECTIVE RESPONSE
r DEFENSIVE RESPONSE
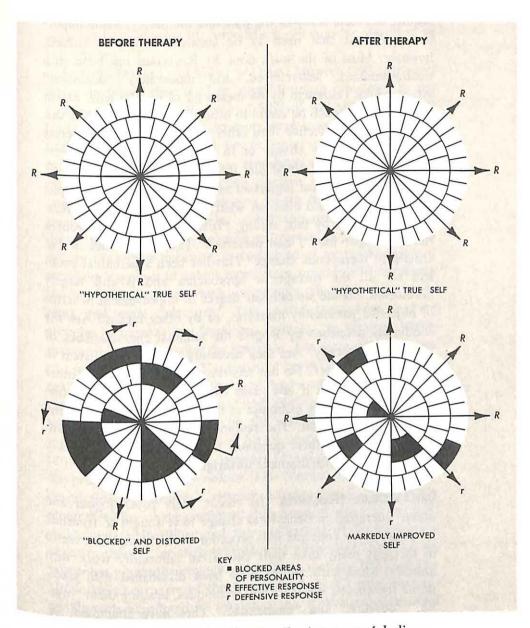
FIGURE 7.2   *Changes in the self following successful cli-ent-centered therapy compared with the true self.*

therapists who are skilled in empathy, tend to improve, but, when treated by therapists who are not so skilled, tend to get worse.

We shall not attempt, at this point, to evaluate either the effectiveness of this therapeutic approach or the adequacy of the research. This is a highly complex problem and would

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require intensive study of the data and the theory. Some important questions that need to be considered may be raised, however. Most of the work done by Rogerians has been with nonhospitalized, self-referred, and moderately "disturbed" young adults (although by no means all of it). To what extent would this approach be useful to other kinds of patients? Is this approach more effective than other approaches either in terms of basic personality change or in duration of results? Rogers himself has recently noted that therapists disagreed very markedly on what the most important aspects of the patient-therapist interaction were and even on what the goals of therapy were. He was shocked by this, stating, "It meant that our differences ran far deeper than I had presumed" [34]. And what of the criteria of therapeutic change? This has been a perennial problem for all the therapeutic approaches and is still largely unresolved. Should we estimate degree of improvement in terms of objective personality measures, or by other means? Are the conditions described by Rogers the minimal characteristics of all effective therapy? Are they necessary as well as sufficient in some or in all cases? No one has the answer to these and other questions, although if one reads the therapeutic literature one can find innumerable examples of therapists who write as if the answers were known. The research by Rogers and his colleagues has posed these questions for all therapeutic schools—and posed them with dramatic forthrightness.

BEHAVIORAL THERAPIES In recent years psychologists and others interested in behavioral change have sought to translate learning-theory concepts into procedures which might be useful in therapy; many take their cues from laboratory work with animals. Most such people have been dissatisfied with traditional therapeutic concepts and techniques, labeling them "mystic," "obscure," and "unscientific." They have attempted, instead, to utilize concepts and methods which were capable of more precise definition and more adequate experimental manipulation. We shall discuss these approaches under the general heading "behavioral therapy," since they all involve relatively specific analysis of the components of the neurotic behavior and try to modify this behavior through application of learning principles. However, not all therapists whom we subsume under the caption "behavioral therapist" operate in this manner. Some

utilize psychoanalytic concepts, some apply social-learning theories, and some apply methods which can best be described as "educational."

In 1950 Dollard and Miller [31] and Mowrer [32] published books in which they tried to apply learning principles to the process of therapy. In the case of Dollard and Miller, relatively traditional psychoanalytic concepts were *translated* into operational learning-theory terms. For example, the Freudian concept of the *pleasure principle* was translated into the concept of *positive reinforcement,* and the concept of *transference* was considered *stimulus generalization.* In the first of these translations the pleasure principle, which Freudians regard as an innate tendency of the organism to respond in terms of maximizing immediate pleasure, is conceived of as the learning of avoidant responses to reduce momentary anxiety. This reinforces the neurotic response, which temporarily offers less pain (anxiety) and more "pleasure." The second translation involves stimulus generalization from one stimulus to another which previously did not evoke the response. For instance, attributes of important persons in the patient's previous experience generalize to the therapist, who may have some, but not all, of these attributes. On the other hand, Mowrer presented alternative analytic formulations for the traditional psychoanalytic ones. He provided a modified set of concepts of the learning process to account for the paradox of neurotic behavior. (See the present authors' *Psychology: The Science of Behavior* for a description of Mowrer's current learning theory.) Attempts along these lines have continued. For example, in 1953 Dollard, Auld, and White illustrated the application of learning principles to therapy by offering a detailed analysis of the complex process of psychotherapy with actual case material [33]. And in 1963 Alexander, one of the founders of the Chicago psychoanalytic school, offered his version of the application of learning theory to psychoanalytically oriented psychotherapy [34].

On the other hand, some psychologists have abandoned psychoanalytic concepts entirely, preferring to conceptualize all of the therapeutic interactions in learning-theory terms. They have discarded, as misleading, concepts of the unconscious, the ego, and transference. Among these people, Wolpe was the first to offer both an explanation of the origin of neurotic behavior and the modification of this behavior entirely in terms of simple

learning principles [6]. Wolpe believes that most, if not all, neurotic behavior can be eliminated by means of the principle of *reciprocal inhibition*—which we shall examine in a moment. The extent of his disagreement with psychoanalysis can be gauged from his statement: "The truth is that after 60 years of expanding influence, psychoanalytic theory still, in almost every particular, consists of nothing more than speculation; none of its major propositions has passed any [empirical] tests" [35]. This disregards, it seems to us, the experimental confirmation of at least some of the psychoanalytic hypotheses.

Let us examine Wolpe's position in some detail. Wolpe, a psychiatrist, had observed that the neurotic behavior of animals was reduced or eliminated when they had pleasurable feeding experiences in the presence of anxiety-producing stimuli. From this he reasoned that, in the human, a response that was evoked by an anxiety-conditioned stimulus might be eliminated if the human were induced to respond simultaneously in some manner that was antagonistic to the anxiety response. Thus, he believed that the bond between the anxiety-evoking stimulus and its response could be weakened if the person were required to respond, in this situation, with an alternate and more pleasurable kind of behavior. The first step in the therapeutic program was to obtain a list of stimuli ranked in terms of severity of inappropriate anxiety produced by them. The list was unique for each patient, of course. Then the patient would be induced to respond to the lowest-ranked, least noxious of these stimuli with an antagonistic response. For example, the patient would be placed in a hypnotic trance, or taught to relax deeply, and told to imagine the low-anxiety stimulus (or stimulus situation). If the patient succeeded in maintaining the state of relaxation, that is, if he did not respond with anxiety, he would then be asked to respond to the next, more anxious, stimulus in another relaxation session. In this manner the dosage of the anxiety-associated stimuli would be increased until the patient was able to tolerate all anxiety-inducing stimuli in that category. He called this therapeutic task the "unmaking of functional neurotic connections" by the process of reciprocal inhibition.

Wolpe used a variety of methods for reducing the "connection" between stimuli and their anxiety responses. He employed "assertive responses," "sexual responses," "respiratory responses," and "motoric responses" as antagonists to the anxiety response. In the beginning he concentrated his work on phobias.

Later he used this approach for many other kinds of neurotic behaviors. He states that his results have been highly successful, claiming as high as 91 percent success in phobic cases, with an average of 10 sessions needed to obtain "success" [36]. He has invited research verification of the effectiveness of his methods, and a new journal is currently reporting studies of this kind (*Behavior Research and Therapy*).

However, the usefulness of Wolpe's approach remains open to clinical and empirical verification. This method may have some utility with respect to "biotropic" conditions, i.e., conditions involving the autonomic nervous system in which the goal of therapy is the removal of symptoms [37]. There is a question as to the applicability of this method to "sociotropic" conditions, i.e., those which involve complex social-cultural problems. Eysenck, a British psychologist who has also been experimenting with conditioning methods, raises other issues [38]. He believes that methods of "classical extinction" of responses, like Wolpe's reciprocal inhibition, may be effective for conditions such as phobias. However, he believes that other methods are necessary for conditions which are not essentially autonomic nervous system responses. Conditions like homosexuality, perversions, and alcoholic addictions, he thinks, can be treated by shaping new response patterns in the problem situation by *partial reinforcement*. Competing, antagonistic responses would be induced in the presence of appropriate stimuli and reinforced, or rewarded, on an intermittent basis; i.e., the responses would sometimes be rewarded and would sometimes not be rewarded. It has also been argued, by dynamically oriented psychologists, that symptom removal without resolution of the underlying conflicts produces, at best, a displacement of the symptom. Therefore, anxiety is only temporarily reduced. It may even make the person's total behavior more maladaptive in time. For these and related questions, we need careful research evidence.

A Comparison of Various Forms of Psychotherapy

If the student has become somewhat bewildered by the profusion of claims and counterclaims made by the various proponents of differing schools of psychotherapy, this is entirely understandable. It is clear that the experts do not agree on the

goals of therapy. Nor do they agree on the essential ingredients of the therapeutic process, although, as we have seen, there is some consensus on some of them. The past few decades have been marked by a proliferation of research studies, some of them trivial, some of them irrelevant, but quite a few of real significance. To date, research has been most profitably applied to relatively simple aspects of the total therapeutic program, such as measuring some types of change (as in studies of self-perception), measuring patient and therapist interactions (as in studies of degree of empathy), and measuring specific attributes of the patient and of the therapist.

Our discussion of the nature of psychopathology in Chapter 6 revealed the enormous complexity of these phenomena and the difficulties in diagnostic assessment of such conditions. From this perspective we can see that it is quite possible that markedly differing therapeutic aproaches are needed for different types of cases. For example, it is quite difficult to see how Rogerian therapy could be applied effectively if the patient is unmotivated for therapeutic change (as in psychopathic states or in catatonic withdrawal). Psychoanalysis has been shown to be ineffective for most types of schizophrenia, and psychoanalysts working with such patients, as at the Menninger Foundation, have had to modify this approach considerably to achieve some degree of success [39]. Adlerian therapy seems to be effective for certain kinds of cases and is thought to be relatively more effective than other approaches when problems of the patient's "life-style" are involved. As we have noted, behavior therapy has claimed remarkable effectiveness with certain kinds of phobic patients. All therapeutic approaches seem to have some degree of success in reducing anxiety, but reduction of anxiety, while perhaps basic, does not by itself guarantee effective therapeutic change.

Where does this leave us at present? Obviously, we are not in a position to answer this question. Certain considerations seem important to emphasize, and some provocative speculation may be profitable at this point. In order to address ourselves to this task, let us first consider an actual case of an individual as he presents himself for psychotherapy.

This young man of 24 years, a graduate student, complains that he has begun to find that he is ineffective in his studies. Try as he will, he finds it difficult to complete term papers, and he has a gnawing sense of his own incompetence. He claims that

even when he was more successful in his studies, during undergraduate days, he still felt himself to be inadequate, although he "knew" he had very superior intelligence. In the early, exploratory sessions of therapy, some new complaints begin to emerge. The most striking of these is his feeling that he is "about ready to fall apart," i.e., to lose self-control and possibly become psychotic. Now he admits to periods of severe depression, starting at or shortly after the beginning of puberty. He also speaks of shyness with girls and tendencies to withdraw into his own world of private fantasy. Reluctantly he admits to severe and terrifying nightmares which he has been unwilling to discuss heretofore because their content involves homosexual orgies, and such thoughts are morally reprehensible to him.

As this man proceeds with uncovering therapy, many underlying layers of conflict emerge. With great affection he recalls his highly competent mother, who managed his life with skill and success, always guiding him to what she considered the "right" decisions or the "right" behavior. He recalls how he despised his father, who assumed a passive role in the home and seemed totally ineffective in relation to his mother. Still later, this man's hatred for his mother is dramatically expressed, and his concealed fear of offending her becomes apparent. Subsequently, he remembers some experience with his father, when they had outings alone, but he also remembers returning home and being afraid to tell his mother how much he had enjoyed his father's companionship. In working through these ambivalent feelings toward both parents, he becomes aware of feelings of panic concerning his conscious homosexual urges and, simultaneously, begins to express great anger toward the therapist. This helps him to keep the therapist at a distance. His thinking now assumes paranoid coloring, but his contact with reality is maintained. Despite, or possibly because of, these strong affects, he finds that he can now apply himself easily to his schoolwork. After a considerable additional period of therapy, he is finally able to achieve comfortable intra- and interpersonal effectiveness.

Although we have only begun to sketch some of the major aspects of this man's communications in therapy, we can already see how complex are the determinants of his behavior. However, rather than attempt to evaluate the precise nature of the psychopathology, let us consider some of the therapeutic tasks which his case presents.

Cases of this kind seem to present some obvious and important differences from other cases, such as those involving relatively restricted phobias, simple hypertension, or gastrointestinal complaints. The former involve the "total personality" with more diffuse psychological, motor, and cognitive phenomena.

The latter, typically, involve more circumscribed, more localized, and perhaps relatively focused autonomic disturbances. It is also well known, to anyone who has had extensive psychotherapeutic experience with diverse types of clinical problems, that some cases present, at first, what seem to be restricted disturbances (as in cases of apparently simple obsessive-compulsive phenomena) but turn out to be cases involving complex and severe ego fragmentation (when it is discovered that the obsessive behavior "conceals" a profound schizophrenic reaction pattern).

Thus, when attempting to compare the effectiveness of differing approaches to psychotherapy, it is very important to equate for comparability of psychopathology. In a number of attempts to compare the relative effectiveness of different forms of therapy (see, for example [40]) this primary requirement of adequate research design has not been met. These considerations lead to the following summary comments.

1. Comparison of the relative effectiveness of different therapeutic approaches must control carefully for comparability of psychopathology.

2. Closely related to this first point is a second general consideration: The relative effectiveness of therapies must be evaluated in terms of the types and degrees of improvement. The case described above did have counseling during his undergraduate days. He did learn to feel a little better about himself. But the improvement did not last. Nor were any of the "deeper" problems dealt with in this earlier counseling.

3. A third point concerns the focus of the therapeutic interaction. In listening to, and trying to understand a patient, what aspects of personality functioning (overt versus covert, rational versus irrational, concrete versus symbolic, etc.) are attended to by the therapist? It seems clear that different schools of therapy *select* aspects of the communication between patient and therapist in different ways. Both their explicit and implicit philosophy and psychological orientation train them to respond to different kinds of behavior. Studies of the Sullivanian type of therapy have shown that this bias of the therapist influences the type of interaction. Even in standardized testing situations, communication can be greatly influenced by both the explicit and implicit stimulus values of the psychologist [41]. Not only does the therapeutic orientation of the therapist produce such effect, but so does the nature of the therapist's personality [42].

4. Therapeutic approaches differ in terms of the degree of responsibility and/or authority which the therapist assumes. In the case illustration we have given, a number of issues along this line become evident. What responsibility should or must the therapist assume for a person with depressive trends or with a person who seems to be on the edge of a psychotic breakdown? Does he need to evaluate the probability of some dangerous homicidal or suicidal acting-out or of severe disorganization of the personality? And should he take any steps to counteract such trends? Such problems present moral and strategic issues on which the different schools of therapy diverge widely.

5. In the course of therapy, progress may be markedly influenced by the therapeutic strategy. Some patients leave therapy because they need, or feel they need, some direction by the therapist and do not obtain it. Are such patients necessarily bad therapeutic risks, or is the therapeutic approach at fault? Can we assume that providing a warm, accepting, and empathic understanding will necessarily produce exposure of significant unconscious material? Is it necessary for the therapist to help actively in working through the patient's resistances and to prevent him from avoiding or distorting reality so that anxiety does not become intolerable? Rankians and Rogerians seem to differ markedly from Freudians and Adlerians on this issue. Will some patients leave therapy with false feelings of comfort, not because they have resolved their underlying problems, but with relief because they did not have to face them? In our case illustration, would the several layers of the problem have been exposed, exposed more slowly or more rapidly, or exposed more deeply, if permissive or behavioral therapy had been tried? These are questions that need empirical study.

6. How much awareness need the therapist have concerning his own "blind spots"? Some schools of psychotherapy require that the therapist himself be analyzed and have intense personal supervision so that he can resolve his own conflicts or at least become sensitive to his own defenses. Other schools minimize or neglect this aspect of training. How important is it? How does it affect therapeutic change? We have some evidence which indicates that this factor is quite important [43]. Involved in this issue is the more basic philosophical problem of the approach to scientific study of the personality; i.e., should we consider persons as "objects" with their own immutable characteristics, or should we view persons as adaptive organisms whose be-

havior can only be understood in terms of interacting fields of forces of the person and those with whom he is interacting?

7. Another general issue which has received very little attention in empirical studies, although there is ample clinical commentary about it, concerns the significance of the *setting* in which therapy takes place. Psychoanalysts speak of the pre-transference effects of the status of the psycnoanalyst or of the institute in which he functions. Psychologists have studied some of the effects of the "setting" upon behavioral performance [44]. There are many possible factors in the therapeutic setting: the reputation of the therapist(s); the reputation of the clinic, hospital, or center; the physical characteristics of the therapy room; the frequency and distribution of therapy sessions; the anticipated duration of therapy. Such factors may affect the patient's expectations, and, in turn, the patient's expectations may affect his selection of the therapist and the setting in which he functions. Patients frequently comment that they wish to retain some degree of privacy and therefore decide to seek therapy outside a clinic or hospital. Others prefer to be treated by a doctor of medicine or by a male therapist. Still others wish to have careful diagnostic assessment before they commence therapy. These examples are indicative of the probable influence of the "setting" in relation to patients' expectancies.

Let us turn now to another orientation in comparing the various approaches to psychotherapy. Increasingly, therapists of many persuasions are seeking to codify the nature of their therapeutic operations and to define them more explicitly and precisely. Increasingly, attempts are being made to understand the nature of therapeutic change in terms of learning principles. Since the human organism inherits only general behavior tendencies, the precise nature of his performance must depend significantly upon the interrelationship between the individual and the environment to which he is exposed. At the least, what is known about learning principles can assist in maximizing the relearning situation that constitutes therapy. At the most, all of therapy can be understood in terms of such principles. However, we must recognize that therapy is, in fact, a highly complex learning task. We do not yet have the knowledge which enables us to predict the learning principles that would be appropriate for specific individuals at different stages in their therapeutic progress. One great danger of the advocacy of the

learning-theory approach to therapy is that the need to "operationalize" may cause oversimplification of the therapeutic problem. In the process, scientific progress may be retarded rather than accelerated. It is even appropriate to ask whether learning theory can ever be expected to account for all therapeutic change. As we know, most learning theorists use the simplest kinds of experimental situations in order to understand these before applying learning principles to more complex situations. The caution of such theorists can serve as a warning to those who would recklessly extrapolate their results to psychotherapy.

Most, but not all, therapeutic schools recognize the great importance of reducing excessive anxiety in order to assist the individual. It seems to us that, for many clinical conditions, maintenance of anxiety, at tolerable limits for the patient, enables him to develop more accurate perception of the nature of his conflicts and to attempt new methods of dealing with them. This control of the intensity of the anxiety may be dealt with explicitly by the therapist, as Wolpe does, or it may be handled through the utilization of a permissive and accepting therapeutic atmosphere, as Rogerians and many others do. It may be necessary, in some pathological conditions, and at some stages of therapy, for others to attempt to *increase* the anxiety reaction in order to stimulate some favorable changes. For instance, when the patient attempts to avoid awareness of conflicts (as in some psychopathic states) or when his symptoms offer temporary neurotic satisfactions (as in cases of hysteria), such a strategy may be indicated.

But, there is a fundamental question as to whether anxiety manipulation, in any fashion, is a *sufficient condition* for therapeutic change. Can we assume that all individuals are capable of improving their functioning, once neurotic patterns have been established, if only anxiety is lessened? Is not some kind of directed learning necessary, at least in some cases? This appears to be necessary in psychosis, in character disorder, and in psychopathic states or severe problems of impulse control. And if some form of directed learning is necessary, how is it to be provided? The followers of Adler provide suggestions for the re-education of the patient. The Freudians call attention to the patient's resistance, and especially to the transference relationship, as well as provide suggestions for ego re-education. The behavioral therapists use some form of explicit conditioning.

There are other forms of therapy than individual psychotherapy, and it is to some of these that we now turn our attention.

Group and Environmental Therapy

Treatment of individuals in groups had its beginnings in about 1905. At first this method had as its major aim the building of morale through identification with the leader of the group and with the other members. Pratt, who fostered this approach with individuals suffering from pulmonary tuberculosis, thought of it as *repressive-inspirational* therapy [45], because it attempted to change behavior by example and illustration without uncovering unconscious conflicts. A few years later, Marsh, who was a minister at the time, utilized this approach with psychoneurotics. He subsequently received training as a psychiatrist and applied this kind of group therapy to psychotics, calling it the "psychological equivalent of the revival" [46]. In 1911, Moreno developed a method which he called psychodrama [47]. In this approach a number of patients were asked to "role-play" certain kinds of conflict situations. The patients and staff members acted these conflicts out in a dramatic setting on a stage, with other patients present. The chief aims of this method were to develop spontaneity in expressing feeling and to become more fully aware of conflictful material that had been warded off from awareness. In the 1930's, Wender [48] and Schilder [49] applied psychoanalytic principles to group therapy. In World War II, great impetus was given to group therapy, chiefly because of the need to treat large numbers of patients economically. Since then, group methods have proliferated, and considerable research attention has been given to group processes and to outcomes of group therapy. Social psychologists contributed significant increments to our psychological knowledge of the nature of group structure and group interactions. Cartwright and Zander summarize the theories and research up to 1953 [50]. A more recent and quite general summary of socially oriented efforts at inducing psychological change is provided by Lippitt, Watson, and Westley [51].

There are a number of quite different orientations toward the functions of a group for purposes of therapy. For some, like

Moreno's psychodrama. Moreno Academy, Beacon, New York
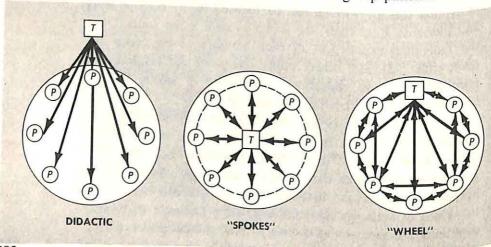
Wender, "The premise of group psychotherapy is that the human individual is a 'group animal,' seeking a satisfying niche in his social setting" [48]. For them, the group provides for special kinds of interactions among members—not available in individual therapy—which can be focused on by both patients and therapist. For others, the group as such is not studied, but the individual experiences of each member of the group are dealt with [52]. Still others utilize the group for inspirational purposes or as an educational experience in which didactic instruction in mental health problems is given [53].

In the past decade or so, theoretical and research attention has been given to the therapeutic effects of the nature of the "hospital environment" as it influences patients' behavior [54]. It has been shown that the kind of relationships existing among hospital personnel, and between them and patients, as well as the kinds of authority and communication channels that exist, can influence the rate of recovery. The characteristics of the community and relationships with psychopathology have also

been studied by sociologists, psychiatrists, and psychologists [55, 56, and 57].

Group therapy seems to have certain kinds of advantages which may complement or even supplement individual therapy. In the first place, it provides for *economy,* since more patients can be seen by fewer therapists. In the second place, it can provide the *emotional support of the group* for members who are fearful of exposing themselves in individual therapy. Of course, there are some patients who are unduly threatened by exposure in a group; but others derive support from a group in which similar problems are being experienced and similar feelings are expressed. Perhaps more important than either of these advantages is that the group provides opportunity for each individual to relate to and interact with a number of different people. Thus, the *complexity of his reactions* can be observed at first hand as the patient reacts differentially to different people, as he responds to criticism or support, as he feels competitiveness or co-operation, and so on. In individual therapy, the patient can only talk about these varying behavioral reactions. They cannot be observed directly, and neither patient nor therapist can experience them directly. Finally, *group process,* involving the overt and implicit interactions within the group (such as the formation of cliques, the taking-over of leadership, and so on), can be experienced and dealt with, whereas only two-person communication is possible in individual therapy.

It may be helpful to conceptualize group therapy in terms of the nature of the interrelationships among patients and therapist. Figure 7.3 illustrates three kinds of group patterns. In *A,*

DIDACTIC   "SPOKES"   "WHEEL"

FIGURE 7.3   *Schematic plans of three types of therapy groups.*

the therapist is outside and "above" the group. The lines of communication go, almost exclusively, from him to the patients. There is little interaction among the patients. This is the model of group therapy which has been called repressive-inspirational. The therapist is either a "teacher" and presents "information" which may be useful for the patients, or the therapist is a "leader" and exhorts, inspires, motivates, and the like.

In *B,* the therapist is also a central figure, but now he is within the group, and the lines of communication go directly from him to each patient. They also go directly from each patient to him, as well as from each patient to every other patient. This is the model of psychoanalytic and other types of group therapy in which the reactions of the group, the interactions of patients and therapists, and the interactions of patients among themselves are foci of the therapeutic work. The group is now being utilized as a source of information as well as a means of therapeutic change. Sometimes patients help one another more than the therapist can help them. Sometimes the therapist can make use of reactions of the group to a particular patient. In these and other ways the domain of data available to both patient and therapist can be greatly extended over that which is available in individual therapy.

In *C,* the therapist is essentially another member of the group. Within the group, communication is readily available to all members. The therapist is a member of the group and adds his resources (training and personality) to it, but he does not dominate it or lead it. This is the model of client-centered or permissive therapies applied to groups. The group works on its own problems, making whatever use it wishes of all of the members of the group.

From inspection of these three types of group organizations, it can be seen that different uses tend to be made of the group and of members of the group. In type *B,* called the "Spokes" type, since the organization resembles a wheel with radial spokes, it would be expected that strong transference reactions between patients and therapist would be maximized because of the focus of the group on the therapist. The group is also likely to become a vehicle for transferences among members of the group. The type *C* group, called the "Wheel" type, would not be likely to generate so much patient-therapist or even patient-patient transference since the therapist is not a central figure and patient-patient interactions are not necessarily maximized.

However, it might generate more "group feeling," more group cohesiveness, and more permissive expression of feeling than type *B,* because "group" reactions are maximized. The type *A* group would be used, mainly, for didactic teaching purposes and would enable the inspirational or exhortatory therapist to maximize his effects. Psychoanalysts tend to use type *B* groups, while Rogerians tend to use type *C.*

It has been learned from experience that groups of types *B* and *C* should usually have from six to eight members. The criteria for selection and composition of the group have also received some research study. These findings suggest that some kind of balance in the personality of the members must be achieved if the group is not to disintegrate. For example, the group should not be overbalanced with either verbally aggressive or very shy individuals. In the former case, there would be a likelihood of disruption of the group, due to excessive competitive behavior. In the latter case, the shy members, unless there were at least two, would tend to withdraw within or from the group or participate to a minimal degree. There is less agreement on such variables as sex, educational level, socioeconomic status, and type of psychopathology. Some have found that heterogeneity is not undesirable, while others tend to disagree [58, 59]. Groups of psychotic hospitalized patients have been found to benefit from all three types of group-therapy programs. Fox has come to the conclusion, contrary to a previously held belief, that criminal offenders can be helped by group therapy and that such therapy is more effective than individual therapy because it provides more opportunity for learning appropriate social roles [60]. It has been found that even imprisoned sexual psychopaths, a group that is notoriously difficult to treat, were able to improve sufficiently to be returned from prison to society by means of group therapy. About 66 percent of a group of 120 such cases showed this amount of improvement [61].

All therapeutic viewpoints are represented in programs of group therapy [62]. Furthermore, many have been combined. For example, Gestalt and psychoanalytic positions were combined by Bach, who has provided us with an excellent rationale for his methods and with criteria for the selection of suitable patients for such work [58]. Others have used Sullivanian concepts in their approach. Coffey [63], in studying the process of group behavior, following this orientation, has distinguished

sequential phases in group therapy: (1) an early period of defensiveness; (2) a later stage of "confiding," in which fantasies and unconscious roles are communicated and tested out; and (3) a final integrative-prospective period, in which conflicts are resolved and new self-concepts emerge. These phases characterize the group's process and not necessarily each member of the group.

Variants of the group-therapy program have also been developed. Slavson, a leader in such modifications, describes what he calls "activity group therapy," originally used with children manifesting deviant patterns of social behavior [64]. In an arts-and-craft type of setting, children were encouraged to join the "club" and engage in projects of their own choosing. They tended to express their feelings freely and even enjoyably and, as a result, were helped in understanding their internal conflicts and in integrating new roles for themselves. Extensive work with delinquent and aggressive children has been done by Redl, who is psychoanalytically oriented. He has directed considerable research toward unearthing the types of specific therapeutic techniques that are most helpful. He has also elaborated the mechanisms of group behavior that facilitate constructive behavioral change as well as those that are destructive [65]. In recent years, family therapy (or *conjoint therapy*, as it is called), with several members of the family, has been successfully applied.

The field of group therapy is an active one. Most of the concepts employed still lean heavily upon those that have been carried over from individual therapy. Current research programs are beginning to develop new concepts and idiosyncratic techniques and are testing them out in a great variety of group settings.

Somatic Methods of Treatment

The recent developments in the medical and health sciences have furnished us with a variety of chemical methods of treatment. We have reached the age of "wonder drugs," in which extraordinary changes in behavior can be induced through the use of medication. Although the use of such physical methods and drugs is restricted to licensed physicians, research teams composed of psychiatrists, physiologists, chemists, and psychol-

ogists are engaged in trying to evaluate the effectiveness of such methods of treatment.

Exorbitant claims have universally been made for almost all chemical methods of treatment when first introduced. Such claims were followed, after extensive research with the method, by sobering re-evaluations. The findings to date may be summarized as follows:

1. Chemical methods of treatment are most effective with cases of recent origin.
2. With cases of long-term or chronic psychopathology, chemical methods of treatment are most effective in reducing agitation and excessive states of excitement, thus making such cases more "manageable."
3. Chemical methods of treatment are most effective in reducing the severity of symptoms but are not likely to have great effect upon the basic problems or in producing significant improvement in ego functions.
4. Such methods have relatively little effect in changing disorders of thinking, although they may reduce hallucinations or delusions. They appear to have little value in the psychoneuroses, except in helping to reduce anxiety. Even here, chronic anxiety states are not relieved.
5. They are sometimes useful in helping to make patients accessible for psychotherapy. Some patients, like those who are severely depressed or agitated, who would otherwise not be able to respond to such treatment, can be sufficiently helped to make other psychotherapeutic methods available.
6. In general, the most lasting and significant effects have been produced in cases of uncomplicated depression.
7. There is a danger of unfavorable side effects, sometimes only temporarily disabling, but occasionally fatal.
8. There are highly significant differences in the ways patients, even in the same pathological category, respond to such methods. The criteria for the selection of a drug for a particular patient are therefore quite difficult to apply.
9. In most instances, combined chemical and psychotherapeutic treatment is the best procedure.

We shall do no more than highlight some of the specific somatic methods of treatment, referring to specialized summaries or other types of references whenever possible. Our aim,

here, is merely to introduce the student to this technical field and provide some "feel" for its methods.

SHOCK THERAPIES The shock therapies were in prominent use for a while until more effective and less drastic methods, especially the various drug therapies, became available in recent years. These methods have in common the feature that the patient is induced to go into "shock," in which, usually following a period of unconsciousness, there are convulsions and spasms, followed by regression in behavior to more infantile modes of responding, such as infantile speech and thumb-sucking, and after which, especially with the repeated application of shock treatment, there are changes in the emotional tone and the symptomatic forms of behavior.

Shock can be induced chemically or electrically. Chemically induced shock was introduced by the Viennese psychiatrist, Sakel, who employed the hormone *insulin* [66]. In insulin shock there is a temporarily reduced blood-sugar level. Complicated changes in physiological reactions follow, including abnormal neural activity and motor seizures. The metabolism of the brain, especially of the higher centers such as the cortex, is profoundly altered. After a series of such treatments there may be improvement in the patient's condition. Insulin treatment was used most extensively with schizophrenics, although it has also been employed with neurotic cases showing intense anxiety. Many studies of the effectiveness of insulin shock have been made, but the results are not universally accepted because of problems with research design. In one typical study, in which careful control was employed for a treated and an untreated group, Bond and Rivers found that with insulin-shock treatment 54 percent of hospitalized patients made a "social recovery" (i.e., were able to make some social adjustments), whereas without insulin-shock treatment only 20 percent made such a recovery [67]. Moreover, in a follow-up study made five years later, a significantly higher proportion of the treated than the untreated cases maintained their improvement. These favorable outcomes have not been reported by other workers, however.

Electroshock treatment can be given either at convulsive or subconvulsive levels. An electrical current is applied to the head through two electrodes. The amount of applied voltage and the duration of application determine whether or not a convulsion will be produced. As with insulin shock, a number of

treatments are given, depending upon the patient's response to the procedure. The greatest improvement tends to occur in disturbed, emotional, psychotic states, especially in psychotic depression, but electroconvulsive therapy has been used for many other conditions. There has been considerable discussion of possible organic brain damage caused by electroshock therapy, but most studies have failed to reveal anything other than transient constriction of blood cells without damage to nerve cells. However, memory changes do occur, and there are indications of organic damage when electroencephalographic studies of the brain are made. A very thorough summary of clinical and research findings with electroshock therapy has been supplied by Kalinowsky [68].

DRUG THERAPIES An exceedingly great variety of drugs has been employed in the treatment of all types of psychopathologies. Of these the most widely known, and apparently the most useful, have been the tranquilizing drugs. For example, chlorpromazine, one of the phenothiazine compounds and commonly known as a tranquilizer, has been extensively employed in the treatment of schizophrenia and depression. However, it is no longer used alone in cases of depression because such individuals tend to become much more severely depressed and to stay that way. In such cases, electroshock therapy and a tranquilizer are combined. In evaluating the effectiveness of chlorpromazine with schizophrenics, Hoch states, "In our experience, 10 to 15 per cent of schizophrenic patients improve to such a degree that they can go back to the community and function adequately" [69]. The use of this drug is attended by possible complications, among which the development of jaundice and a drop in the white blood count are the most serious.

Various drugs have been used successfully in the treatment of depression. Recently a highly effective drug, *imipramine hydrochloride* (Tofranil), has been reported. This drug is reputed to be most effective in cases with endogenous (or essential) depression, and very few side effects have been reported thus far. Moreover, there have been a number of research studies which confirm this drug's usefulness [70, 71].

PSYCHOSURGERY This euphonious-sounding term for drastic surgical procedures was coined to indicate that the purpose of the surgery was to produce psychological consequences. Vari-

ous types of brain surgery have been used, the most common ones involving the frontal lobes of the brain. In *prefrontal lobotomy* fibers connecting prefrontal areas with certain sub-cortical limbic-system areas are severed. In *prefrontal lobectomy* the prefrontal neocortical regions are actually removed. The intent is to change the emotional reactions of the patient by this disruption of nerve connections. Such measures are employed only when there are highly persistent and intense emotional tensions which are disabling or dangerous for the patient. Even then they are used only after other methods have proved to be ineffectual. Klebanoff and his colleagues report, after careful review of the research literature, that, although results vary with both the type of surgery and the condition of the patient, reduced capacity for abstract thinking results, together with significant loss in memory and capacity for sustained attention. Personality changes are particularly likely to be profound, with the development of apathy and depression quite common [72]. Freeman, one of the world's leading authorities on psychosurgery, states, ". . . psychosurgery reduces creativity, sometimes to the vanishing point" [73]. Clearly, psychosurgery is a drastic measure, at best, and its possible use needs extended and very careful evaluation in any given instance.

Varieties of Mental Health Personnel

Some degree of understanding of the nature of the therapeutic process may be gained from an examination of the varieties of personnel involved in such programs. Such people are usually classified into professional and subprofessional categories. The presumption, of course, is that the major therapeutic contributions are made by professionally trained personnel, but, painful as it may be to some, this is not necessarily always the case. Clifford Beers, the founder of the National Mental Hygiene Movement in this country and himself a former psychiatric patient who spent considerable time in psychiatric hospitals, attributed his recovery largely to the acceptance and support he gained from an attendant in one of these hospitals. We should at least note that during a considerable portion of their time in mental hospitals, patients are in the company of, and are under the supervision and even guidance of ward attendants, volunteer workers (usually, interested adults in the community), and

other nonprofessional personnel. There are also semiprofessional personnel, usually with carefully specified training at the college level, such as occupational therapists and physical therapists.

MEDICALLY TRAINED PERSONNEL Time was when the only professionally trained personnel who treated people with psychopathology were psychiatrists. Until recently, most laymen still thought of the psychiatrist when a psychotherapist was needed. Although the picture has changed, psychiatrists are numerically the largest single group of psychotherapists.

A psychiatrist is a member of the medical profession whose specialty is the diagnosis and treatment of people suffering from psychopathology. Following his internship as a doctor of medicine, he follows a psychiatric residency program, usually for three years. This training is offered in selected teaching hospitals and clinics, where he obtains diagnostic and therapeutic experience under careful supervision. After a period of suitable experience, and after passing rigid oral and written examinations under the auspices of the American Board of Neurology and Psychiatry, he is known as a diplomate in psychiatry.

The psychiatrist is the only mental health worker (except for medical psychoanalysts) who is trained, and legally qualified, to administer drugs and use other forms of somatic therapy, such as electroshock treatment. In cases of severe psychopathology which require careful medical supervision and somatic treatment, at least as part of the total treatment program, he is the one who has the legal responsibility for the patient.

Considerable controversy has arisen concerning the appropriateness of the training of psychiatrists, mainly on two counts. One is that he spends many years in training as a physician and comparatively little time in the study of psychopathology, developmental psychology, personality therapy, personality diagnosis, psychotherapeutic theory, and kindred subjects. The argument is that much of the medical training is unrelated to the practice of psychiatry, that medical training may actually reduce an individual's effectiveness in the practice of psychotherapy, and that too little training is offered in many areas of personality, psychopathology, and psychotherapy [74]. In terms of actual practice, these areas pre-empt most of the psychiatrist's time. Some psychiatrists have proposed a new program of training, involving more psychology and less medicine, which

would lead to a degree of doctor of clinical psychology. This would be a combined medical and psychological program. Up to the present time this proposal has not gained wide acceptance or support. It has also been argued that psychiatrists should receive training in research methodology—an area that is now almost completely neglected in their training—because of the great need to evaluate psychotherapeutic methods and to discover new or better methods of treatment.

THE PSYCHOANALYST The term psychoanalyst was originally applied only to persons who successfully completed training under the auspices of a Freudian psychoanalytic institute. Today many schools of psychoanalysis exist, such as the Jungian, Adlerian, and Sullivanian. Their trainees also use the appellation of psychoanalyst.

Some psychoanalytical institutes admit nonmedical personnel for training, but in the United States the American Psychoanalytical Association limits its training to doctors of medicine. This is not the case in some European countries. In this country, the psychiatrist (or other medically trained person) who wishes to become a Freudian psychoanalyst is admitted to training after evaluation of his suitability, and he then undergoes a personal psychoanalysis. In the later stages of his training, he undertakes psychoanalytic treatment of patients under conditions of very close supervision. He also attends seminars and case discussions in which he receives further indoctrination and theoretical training in this specialty. Of all professional workers in the mental health field, the psychoanalyst (Freudian) receives the longest and most intensive training in treatment methods. He also is trained extensively, through his own psychoanalysis, to be highly sensitive to his own conflicts and to expressions of conflict in others.

Other schools of psychoanalysis follow relatively similar plans of training, but some admit nonmedical personnel (chiefly psychologists and psychiatric social workers) as well as physicians, and their training programs in some cases may be less intensive.

Many psychoanalysts do not utilize somatic treatment with their patients, referring such cases to physicians or psychiatrists when such treatment is indicated. Most believe that the psychoanalyst's and the physician's roles should be carefully differentiated. For the patient, the two offer highly different kinds of

treatment programs. The patient expects the physician *to do something to him,* whereas in psychoanalysis the patient *must learn to do most of the work himself,* since the psychoanalyst is relatively passive and inactive.

THE CLINICAL PSYCHOLOGIST This is the youngest of the professions involved in the psychotherapy of emotionally disturbed individuals. Although there were some clinical psychologists in this country prior to World War II, these individuals were, for the most part, psychodiagnosticians, that is, they administered and interpreted psychological tests. If they engaged in psychotherapy, they usually did so under direct supervision by a psychiatrist. Some practiced independently after they had obtained training in psychotherapy on some individual basis or through some informal type of apprenticeship.

As a result of the great need for psychotherapists which became evident during World War II, universities began to offer programs leading to the doctoral degree in clinical psychology (Ph.D). Today, there are many universities offering such programs. These programs are constantly undergoing revision as a result of discussion based on experience and research findings, but in the main the Ph.D. program involves approximately four to five years of graduate training, including personality and behavior theory, research, and clinical experience.

All psychologists, including the clinician, are expected to be psychologists first. This means that they must receive training in the major areas of psychology: statistical methods, research methods, learning theory, motivational theory, sensory and perceptual theory, and the physiological background of behavior. They are expected to acquire substantial knowledge in these areas as well as understanding of the theoretical issues. They receive training in the specialized domain of clinical psychology. This includes courses and seminars in diagnostic methods, psychotherapeutic theory and practice, developmental psychology, personality theory, and psychopathology. In addition to field practice given in conjunction with their courses, they are required to complete a year's internship with diagnostic and therapeutic experience under carefully supervised conditions. And finally, they must complete a dissertation based on research to demonstrate competency in this area. Following the completion of the degree, and with the acquisition of further suitable clinical experience, they may apply for examination for

diplomate status to the American Board of Examiners in Professional Psychology and take the oral and written tests required for this kind of certification. They may also apply for certification or licensing in their own state (twenty-five states now have legal provisions of this kind).

Clinical psychologists may practice independently, do either diagnostic or therapeutic work or both, and engage in research. Their basic training differs from all other professional workers in the mental health field in several important respects, among which training in research procedures, personality theory, general psychological theory, and psychological methods of assessment are particularly relevant. Unlike psychiatrists and most psychoanalysts, they do not have any specific medical training and are unable to prescribe drugs or offer somatic treatment. They more frequently work with relatively less disturbed people (especially in school systems and in community clinics with adults), but they also work with patients who are severely psychoneurotic or even psychotic.

As might be expected on the basis of their training, clinical psychologists tend to be much more diverse in their approach than most workers in the mental health field. Some emphasize learning theory in their therapeutic approach, others may follow psychoanalytic approaches, and still others follow approaches based on perceptual theories. They vary widely in their utilization of psychological tests [75]. Increasingly, many attend postdoctoral institutes of different kinds to improve their clinical skills and keep abreast of new findings.

THE PSYCHIATRIC SOCIAL WORKER Growing out of the wide scope of social-work activities, there developed the specialization known as psychiatric social work. Such workers have been employed in a wide variety of social agencies but most commonly have functioned in mental hygiene or psychiatric clinics, departments of psychiatry in hospitals, and in family service agencies.

Their professional training, leading to a Master's degree in social work with a subspecialty in psychiatric social work, is typically a two-year program beyond the bachelor's degree. This training includes course work in such subjects as casework process, personality development, and psychopathology. They are required to have a year's field work in an appropriate psychiatric agency as part of their training. This training is

noteworthy for the close liaison between the school of social work and the agencies providing the field-work experience. The supervised casework experience is of high quality, and there is close supervision of the trainees. In recent years some schools have offered additional graduate training, often in conjunction with departments of psychology and psychiatry, leading to a Ph.D. degree in social work. This program places emphasis upon research in psychiatric social-work problems.

The psychiatric social worker, in the past, was usually a member of the psychiatric team, usually with a psychiatrist and a clinical psychologist. In such roles they have worked with the senior psychotherapist, taking on responsibility for one member of the family while the senior psychotherapist assumed a therapeutic role with another—usually the more critically disturbed member. Sometimes, especially in child guidance or mental health clinics, they have assumed the entire therapeutic task. Frequently they limit their role to assisting patients to deal with environmental problems more effectively or to reduce the severity of their conflicts through emotional support and acceptance, catharsis, and a minimal amount of interpretative work. By virtue of their relatively limited training and responsibility, they have been keenly aware of their own limitations in uncovering deeply repressed material and have referred patients needing more intensive therapy to more qualified therapists. In more recent years the scope of their therapeutic work has increased. Some psychiatric social workers have established themselves in independent practice, most frequently in group practice. In some social agencies the major role assigned to such workers, however, has been in providing service for the intake of patients and in preparing a psychiatric social-work history to assist the therapist.

THE PSYCHIATRIC NURSE The field of psychiatric nursing is changing rapidly, so that statements made about it today will probably be inaccurate within a few years. At the present time, training programs in nursing vary markedly from one state to another. There are two basic paths to accreditation as a nurse. One involves a three-year program in an accredited training institution in which practical training as a nurse, plus course work, leads to a diploma in nursing. Attendance in college is not required. Registration as a nurse is dependent upon passing an examination given by the state nursing board. The other

involves a college program of four or five years in a nursing school and leads to a degree in general nursing.

Psychiatric nursing is learned in an apprenticeship setting, usually in a psychiatric hospital. Sometimes there is also a formal program involving courses and seminars which offer training in interview methods, adjustment, and psychopathology. The basic principles of individual and group psychotherapy are also taught.

The psychiatric nurse is expected to minister to the patient's physical needs but to be aware, at the same time, of the implications of the patient's behavior from a therapeutic viewpoint. She must be able to communicate effectively with the patient, offer emotional support when needed, report to the physician or psychiatrist evidence of significant behavior, and carry out the regime of psychiatric nursing care on the ward that is prescribed for the patient's benefit. Quite often she is the first person to become aware of important changes in the patient's behavior. These might, in some instances, lead to attempts at suicide or to violent "acting-out" of conflicts. She might have to take emergency steps in such situations and then report the behavior to the physician in charge.

The nursing profession is constantly evaluating its training program and attempting to make it more effective.

COMMENTS ABOUT MENTAL HEALTH PERSONNEL It should be obvious that all types of mental health workers share some common attributes. For example, they all have to learn the significance of various types of disturbed personality reactions, they all must learn to listen attentively and supportively, they must know when to encourage or to limit the expression of emotional material, and they all have to be able to respond in terms of the patient's therapeutic needs. The lines of demarcation between the skills employed by the several disciplines are, in many instances, quite hazy. The lines of responsibility may more often be fixed by tradition and awareness of status than by skill or competence. Although there are some obvious and apparently important differences in skill, training, and length of instruction, it becomes an empirical question to determine how significant these differences—and others—are in relation to therapeutic effectiveness. We are a long way from knowing the answers to this question, and one of the factors that tends to impede accumulation of research evidence along such lines is,

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quite frankly, that of "vested interests." Although we believe that differences in training and careful methods of certification and licensing are very important, we don't know if this is the complete solution to the problem.

Aside from differences in training, there are also apparently important differences among the professions in selection of candidates. Some professions require college graduation or even postcollege education before specialized training is offered. Completion of such training is probably significantly correlated with level of intelligence, with habits of disciplined study, motivation for success and status, and with other personality variables. The mental health field must be as candid about such matters as it asks patients to be in their psychotherapeutic sessions. It should examine itself critically and be willing to assess the importance of current standards and practices by adequate research methods. Fortunately there are many signs that significant portions of the membership of all the mental health professions are alert to such issues and are seeking to initiate programs for such evaluations.

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EIGHT ASSESSMENT: INTRA- AND INTERPERSONAL BEHAVIOR

General Problems

Throughout this book we were constantly confronted with two basic methodological problems: (1) How can we construct adequate definitions of behavioral variables? (2) Assuming adequate definitions of variables, how can we assess them with reliability and validity? In this chapter we shall examine these questions in details. We shall consider both individual and

group variables. We shall concentrate on definitions and assessment problems for the "individual variable" of intelligence, such personality variables as "dependence," and "ego strength," and the "interpersonal variable" of "attitudes."

We have indicated at numerous points throughout this book that a behavioral variable is really nothing more than hypothesis about behavior. Such variables can be conceptualized in terms of measurable overt behavior, or in terms of covert factors which are *inferred* from directly observed behavior. In either case, we first need to define clearly the behavior to be observed. Having done so, we make the assumption that the observations or measurements tell us something about the variable presumably being studied.

If we wish to measure an individual's intelligence, we must have at least a working definition of this variable. As will be noted later, this is not a simple matter. However, we should mention that the type of definition used determines the method or methods used for assessment. One might think of intelligence as a single attribute of the individual which can predict behavior in certain types of situations. Samples of behavior are obtained, each of which is thought to be an indicator of "intelligence." The more samples of intelligent behavior the individual manifests, the more likely is the person to possess a high level of intelligence. Holding such a view, a test for intelligence could be merely a collection of tasks, such as solutions to problems or answers to questions. The tasks would be chosen so that their solution required "intelligence," and one might simply add up the number of tasks correctly solved.

On the other hand, intelligence can be viewed as a quality of mental functioning. That is, one could hold that the more intelligent person approaches problems differently than the less intelligent person. Therefore, assessment of intelligence requires making judgments as to the quality of mental processes within the individual. Such judgments require the obtaining of behavioral samples, but they are used as a basis for inference about more complex mental phenomena rather than as samples of intelligence in themselves.

If the above analysis seems complicated, we should be aware that the problem is actually even more complicated. Another knotty issue relates to the question of whether behavioral variables *exist within the individual* or are the result of *an interaction of factors in the individual and his environment.*

This issue can be seen more readily in relation to personality variables such as "dependence," although it is also relevant in relation to presumably intrapersonal variables such as "intelligence." We know that "dependent behavior" is determined by the person and the total situation. In other words, this variable, and many other personality variables, can be conceived of as determined by the interaction of an individual with his environment rather than as simply an individual characteristic [1, 2].

Still another general consideration should be noted. The measurement of any behavior variable is significantly affected by the observer (or examiner) making the assessment. This problem is really directly related to the more general problem of the interaction of the individual with his environment, but it deserves special attention. We must take into account the possible influence of the observer who is measuring the behavior under observation. In other words, measurement of behavioral phenomena cannot be conceived of as a mechanical procedure in which the obtained results are independent of the observer. Rather, the observer, no matter how hard he may try to be an inconspicuous or insignificant part of the environment, is a *participating observer* and is influencing the phenomenon being assessed.

A few examples of the influence of the participating observer may make this point more meaningful. In the case of both "objective" and "projective" tests of personality (see pp. 389–401) the results may be significantly influenced by the personality of the examiner [3, 4], even though the administration of the test is "standardized." When intelligence tests are administered, the motivation of the examinees, and hence the test results, are influenced by the kind of examiner administering the test [5]. When standard interviewing procedures are used, the obtained results, and therefore the inferences made about the interviewees, vary as a function of the color of the interviewer's skin, his economic status (as inferred from the interviewer's appearance), and other personal attributes [6, 7]. Thus, results of assessment are influenced, sometimes very little, sometimes greatly, by the appearance and behavior of the examiner.

We should stress, once more, that the assessment of any personality characteristic is closely related to theories about the characteristic itself. Behavior should not be observed without certain formal or implicit theoretical assumptions. Adequate evaluations of data about assessment cannot be made without

consideration of the underlying theoretical models upon which the procedures are predicated. These models must involve both theories about the variable and theories of its assessment.

Now, perhaps, the reasons for sampling the three types of attributes will be more meaningful. We shall consider "intelligence" first, as an example of an intra-individual attribute. Then we shall discuss the measurement of social-personality attributes. Finally, we shall discuss group and social-behavior phenomena, such as political behavior, as examples of interpersonal attributes. In each case, we shall try to make explicit certain assumptions about the definition and measurement of the variable so that the phenomena in question may themselves be more fully comprehended.

The Assessment of Intelligence: Background

The approach to the problem of assessing "general intelligence" illustrates some of the issues we have been discussing. Although the nature of intelligence has been long and exhaustively studied, there is still no universal agreement as to whether it is best conceptualized as a single attribute of the person or as a cluster of several independent attributes. As we shall see, the specific methods which have been utilized to assess intelligence were influenced by assumptions held by those devising the instruments. Tests that have been developed to measure this phenomenon reflect these differing assumptions and theories.

We shall also note how prevailing cultural attitudes significantly influence developments in theory and methods. More specifically, the needs of a society affect the approach which the scientist uses in attacking a problem. In the case of intelligence tests, Alfred Binet developed his test of intelligence because society required some method for selecting "slow learners," who could then be offered different kinds of educational treatment.

BINET'S CONTRIBUTIONS In 1905 Binet and Simon published a Metrical Scale of Intelligence, which is usually thought to represent the turning point in the development of measures of intellectual capacities. For Binet this contribution was actually but one more paper on the general problem of evaluating intelligence of children. He had been working on this assess-

ment problem for many years. His 1905 contribution reflects an interesting convergence of work in assessment which was influenced by diverse contemporary social factors.

Before Binet's work a number of approaches to the nature and assessment of intelligence had been investigated. These included the measurement of reaction time and many other kinds of rudimentary indices of physiological reactivity. These simple quasiphysiological indicators were thought to be measures of some quality of efficiency of the entire nervous system and therefore to represent an index of the efficiency of mental activity. They reflected the prevailing spirit of the psychological laboratories in Germany. These laboratories were dedicated to a physiological orientation in studying psychological phenomena. It was believed that investigation of the most uncomplicated behavioral phenomena was the most promising approach to the scientific study of human behavior. It is doubtless true that much of present-day psychology was strongly influenced by this German tradition. However, this dedication to investigation of the simplest aspects of behavior limited the types of tests used to evaluate mental efficiency. Unfortunately, these simple measures of physiological responsiveness failed to correlate with generally accepted criteria of intellectual ability, i.e., intelligence as rated on the basis of accomplishment and on the basis of the age of the person tested (it is assumed that older children have more intellectual ability than younger ones).

Binet's approach to the problem of finding a method to determine intelligence was not strongly influenced by the prevalent Germanic traditions in experimental psychology since his training had been clinical rather than academic. His early professional experiences were obtained in working with patients in a neurological clinic. His professional traditions were French rather than German, and, as luck would have it, he did not read a word of German. Consequently, most of the German psychological and philosophical literature was not readily available to him.

On the other hand, because of his fluent English, Binet was able to read the contributions of the school of philosophers known as the British Associationists. These men also furnished the roots of the modern theories of learning. In any case, in Alfred Binet we find a merger of many sources—influences from French medicine, influences from the British philosophers, and, perhaps surprisingly, influences from the field of law. Binet

had received formal training in law and received a degree in this subject. His interest in medicine stemmed from a long family tradition. He had become interested in the work in hypnotism being done by Charcot and had worked in Charcot's laboratory doing research in abnormal psychology. Coincidentally, as we noted in a previous chapter, this same laboratory had an early and profound effect upon the theoretical formulations of Sigmund Freud.

Binet gradually became interested in studying the differences in degrees of brightness of children. He had embarked on a research program to measure intellectual activity in children ten years before he published the Metrical Scale of Intelligence. Unhampered by the restrictive views of the "tidy science" of the German laboratories, and relying upon his own clinical experience and intuition, he started programs aimed at evaluating not only memory but the vividness of memory, the span and nature of attention, and the ways in which people use images, among other things. His assessment techniques were aimed at finding indices of underlying characteristics believed to exist in everyone. Since he knew that many kinds of mental activity occurred, why not measure them and find which ones were related to intellectual capacity? This is just what he set out to do.

Due to his many contributions in child psychology, Binet was chosen to be on a commission established by the Minister of Public Instruction of France to consider the problem of selecting children for special training who had less than average intelligence. The actual report of the commission was vague, and this probably acted as a spur to Binet, who devoted the remainder of his life to developing tests which would be effective predictors of learning in school. As his work progressed through countless hours of examining and interviewing children, many items were added and then eliminated from the formal test developed by Binet and Simon. Theoretical considerations were minimal, and the ever-present criterion of usefulness became paramount. Items were selected for inclusion if they helped to discriminate the bright from the dull children or if they differentiated older ones from younger ones. Thus there was almost no attempt to preselect specific types of items on some general theoretical basis. Items were included which tapped all kinds of mental characteristics. The Binet test was essentially designed for the specific educational purpose of selecting mentally retarded school children.

MENTAL AGE One of Binet's contributions was the development of the concept of mental age. His rationale for the concept of mental age was approximately the following. Given a pool, or collection, of items of varying difficulty, it is found that older children will answer more of them correctly than younger children. This allows the items to be ordered by categories of increasing difficulty. Items which all of the tested children can answer correctly would represent the easiest end of the scale. Items which none of them could answer would represent the most difficult. Furthermore, the items can be examined to determine which can be answered by children of a given age (assuming all are in the same academic grade). With this information it is then possible to evaluate the mental ability of an individual child on the basis of the items which he can answer correctly. To do this, the entire test is given to a child. Then one determines which items are failed and which are passed, and an "age level" is then established for the child.

For example, let us assume that we have given the test to a seven-year-old child and have found that he can answer all of the questions that are usually passed by seven-year-old children. We might also find that he could pass all of the questions usually answered by eight-year-old children and some of the questions answered by nine-year-old children. Therefore, his mental abilities would be slightly better than that of the average eight-year-old child. Binet suggested that this evaluation could be called "mental age." Arbitrarily, a child's mental age would be determined by the highest level of questions he could pass that were typically passed by children of a specific chronological age. Furthermore, as a more precise criterion, he specified that a child would be assigned a mental age which corresponded to that age category in which he could pass at least 50 percent of the questions. If the boy in our example could pass half of the nine-year-old questions, his mental age would be estimated as nine years. If he could pass less than half of these items but half or more of the eight-year-old items, he would be assigned a mental age of eight years. Therefore, the use of mental tests such as that developed by Binet results in a mental-age score which is used as an indicator of the child's mental accomplishment. Table 8.1 illustrates the calculation of the mental age for three individuals.

It should be noted that mental age is a measure of actual intellectual attainment. It tells what level of functioning on

TABLE 8.1. THREE EXAMPLES OF BINET'S METHOD OF OBTAINING THE MENTAL AGE

Test Items Arranged in Order of Ascending Difficulty	Year Level of Items	Passes and Failures by Item		
		Child A (7 yrs.)	Child B (7 yrs.)	Child C (11 yrs.)
1		+	+	+
2		+	+	+
3	7	+	+	+
4		+	+	+
5		+	+	+
6		+	+	. +
7		+	+	+
8	8	+	+	+
9		+	+	+
10		+	+	+
11		+	+	+
12		−	+	+
13	9	−	+	+
14		−	+	+
15		−	+	−
		−	−	−
16		−	−	−
17		−	−	−
18	10	−	−	−
19		−	−	−
20		−	−	−
		−	−	−

+ = Item Passed
− = Item Failed

Child A obtains a mental age of slightly more than 8 years (Bright)
Child B obtains a mental age of about 9 years (Bright)
Child C obtains a mental age of about 9 years (Dull)

mental tasks the individual is able to reach. By using the chronological age of the examined individual as a point of reference, we can get an idea of his relative superiority or inferiority. Returning to our example, if a child of seven years reaches the nine-year level on a mental test, we consider him to be "bright." If a nine-year-old has a mental age of nine, we consider him "average." If an eleven-year-old attains a mental age of nine, we consider him "dull."

INTELLIGENCE QUOTIENT Since mental age is a measure of level of accomplishment, it must be considered in relation to

chronological age to obtain a measure of relative accomplishment or "degree of brightness." This was what we did, of course, in the preceding paragraph in a crude way. Another way of doing the same thing and of obtaining a quantitative measure of degree of brightness is to obtain the ratio of the mental age to the chronological age. This would give a measure of a person's relative intellectual accomplishment for his age and would give us a numerical value. For example, if a boy of seven years had a mental age of nine, this ratio would be 9/7 and would represent the numerical value of 1.29. We can remove the decimal point in this ratio by multiplying it by 100. We would then have what is conventionally called an intelligence quotient. This quotient would be 129. Similarly, for a boy with a mental age of nine and a chronological age of twelve, the intelligence quotient would be $9/12 \times 100$, or 75. The intellectual quotient, or I.Q., score can be represented in symbolic terms as follows:

$$\frac{\text{M.A.}}{\text{C.A.}} \times 100 = \text{I.Q.}$$

where M.A. stands for mental age and C.A. stands for chronological age.

Several things should be noted about such scores. First, they are measures of intellectual brightness, inasmuch as they represent accomplishment relative to age. Second, since the level of mental accomplishment is always divided by the factor of chronological age, the obtained quotient *could* be relatively constant over time, providing relative mental accomplishment remained constant over time. Whether it is or is not a matter for empirical research will be discussed. Third, the score is dependent upon some measure of mental age. Therefore, the method used to assess mental age is of vital importance. There are many kinds of tests which provide estimates of mental age, and different tests might provide different measures of mental age. One should always include the name or type of test that was utilized in the statement of the obtained I.Q. score.

The computation of an I.Q. score is usually done quite differently today from the earlier procedure, which used the original I.Q. formula noted above—to which there are several objections. In the first place, the I.Q. score was used to predict an individual's mental age at later stages in his development. This procedure made the assumption that rate of mental development is contant—an assumption that has been shown to

be unwarranted. Moreover, the ratio assumes a number of characteristics in the two factors in the ratio; chief among these is the assumption that the units of mental age are equivalent for the entire range of mental development. This assumption has been shown to be untenable. And, finally, the formula is inapplicable at the upper age levels when, because of the shape of the mental-growth curve, mental-age units no longer increase proportionately with chronological age. For these and other reasons, the individual's intelligence test score is nowadays referred to a specially developed table (for each intelligence test) that permits comparison of his score with a distribution of scores on the test made by other individuals of his own age. The I.Q. score is then derived from the table. This type of procedure tends to avoid some of the problems involved in the old method.

MENTAL TESTS IN AMERICA   The approach to assessing intelligence by Binet and Simon was further developed in the United States by Terman at Stanford University. In 1916 he published the first version of what is now a most well-known *individual intelligence test,* called the Stanford-Binet Intelligence Scale. This test was revised in 1937 and again in 1960. This was necessary to improve the predictive capacities of the instrument and to revise some of the tests items because of social and cultural changes occurring in these intervals. It has been learned that responses to "intelligence test items" are influenced by such factors. Consequently, they must be selected so as to be applicable to specific social-cultural conditions.

There is little doubt that the United States is the most "test-conscious" country in the world today. The popularity of mental tests in this country increased sharply during the period of World War I, largely in response to the needs of the military forces to select and train soldiers for jobs in the military services. It was during this war that the first *group intelligence scale,* the Army Alpha, was developed. A similar impetus to the development came from the educators who were instrumental in fostering the development of a group intelligence test for children, the National Intelligence Test, following the war. Moreover, this development was probably based, in turn, on the attitudes which prevailed in the United States. Testing for ability seemed congruent with the belief that efficiency and hard-headed practicality are essential in life and especially in business. To many, therefore, psychological evaluation represented

a method of extending practicality into the management of human affairs. Today, people are evaluated by many kinds of tests for many types of traits and characteristics. They have become the indispensable tool for an assessment-oriented culture.

The most widely assessed psychological characteristic is intelligence. We shall, therefore, discuss some of the critical issues concerning the concept of intelligence and its measurement.

Intelligence: General Considerations

DEFINITIONS McNemar has suggested, with tongue in cheek, that no definition of intelligence is really necessary, since everyone knows it is "the thing the other guy lacks." [8]. This attitude concerning the nature of intelligence is not new. Many years ago another psychologist put it this way: "Intelligence is what intelligence tests test." In short, psychologists have not been able to agree on a definition of the term "intelligence." This may seem surprising, since there has been more work done with psychological tests purporting to measure intelligence than in any other area of behavioral research. On the other hand, the obvious lack of agreement in defining intelligence may obscure a fairly basic agreement regarding the nature of the concept. This is probably the case, since there are certain things that we expect people of superior intelligence to do better, or more frequently, than less intelligent ones. Current intelligence tests are correlated with and predict, with fair accuracy, the rate of academic progress, the level of general scholastic ability, and even many aspects of vocational and professional success. In other words, intelligence tests tend to do those things which we expect them to do if they were measuring something called intelligence. Such facts support the view that, despite the difficulty in providing a universally acceptable and scientifically precise definition, most of us tend to "understand" the term reasonably well. There is still the question whether what we think intelligence tests test is the "real" phenomenon of intelligence.

The lack of formal agreement on the word intelligence stems in part from the fact that different psychologists tend to hold quite different views about its theoretical properties. One major group of psychologists believes that it represents a general trait of mental ability. Another group holds that intelligence is not

one kind of general intellectual ability but is, in fact, only a catchall phrase that represents, poorly at best, a collection of highly specific psychological abilities. This latter group argues (1) that the term intelligence should be abandoned, since it only leads to the misconception that there is some general trait (intelligence), and (2) that the predictive usefulness of a total score, like the I.Q., is less powerful or useful than predictions made from each of the specific mental qualities that go into the total score. This argument is often called the "one versus the many." The controversy has a long history and is still very active. Later in the chapter, when discussing modern developments in research in assessment techniques, we shall return to this issue (pp. 367–370). For the present, however, we should note that this type of controversy has made it difficult to establish a general definition of intelligence.

THE CONSTANCY OF INTELLIGENCE Since the I.Q. score is a ratio of ability to age, it is possible that this measure might remain constant over a number of years. This would indicate, presumably, that a person's intellectual brightness is also fairly constant. In general there are two ways in which such a constancy could be exhibited. In the first, a group of people could be evaluated on tests yielding an I.Q. score; this group could then be retested over the course of years to determine whether the I.Q. score of these people remained constant. In the second, instead of measuring the same group repeatedly, it might be possible to compare *equivalent* groups of people at different times; the major problem in using this method would be to obtain equivalent groups.

Generally speaking, the correlation in obtained I.Q. for the same group of subjects retested over a period of time reveals a fairly high degree of relationship. There is less constancy in I.Q. for groups of brighter people than for the duller ones [9]. The degree of correlation also depends upon several other factors, such as the time interval between tests and the age of the subjects when first tested. Scores on intelligence tests given during infancy or early childhood are notoriously poor predictors of later intelligence level.

From the data available it appears that various patterns of change in intelligence test scores are found in individuals retested many times in long-term studies [10]. Some individuals show gradual improvement over the years. Others show gradual

decline over similar periods. Still others show irregular patterns. Some individuals, of course, show relatively constant scores.

The basic question is, What factor or factors contribute to the relative constancy or variability in I.Q. over a span of years? It would be a happy event if changes in measured intelligence could be associated with significant changes in the environment of the persons being measured. Considerable evidence has been accumulated purporting to demonstrate the influence of favorable social-psychological environments in improving the rate of intellectual development and of unfavorable factors in depressing this rate. Although this evidence is highly important, some investigators have not found such corresponding alterations [11]. The issue is by no means a closed matter. Many psychologists believe that as we obtain more knowledge of the relationship between personality functions and measured intelligence we will better be able to isolate the important environmental correlates of changes in brightness.

The problem of determining the constancy of I.Q. scores is significant for two reasons. First of all, if the results of intelligence-testing are to be utilized in educational planning and counseling, there must be a firm basis for the assumption that a current measure of intelligence has predictive validity for the future. In the second place, if I.Q. scores remain constant over the years despite variability in environmental conditions, this finding would lend support to the position that intelligence is a genetically determined, unitary trait. It is to the second point that we shall now turn our attention.

GENETIC INFLUENCES Men have long been interested in the extent to which their intellectual capacities are determined by genetic factors and the extent to which they are determined by environmental factors. As we have indicated, the issue has not been resolved. The argument continues, and protagonists for each side are able to cite empirical evidence to support their positions. One of the reasons the debate has continued without resolution is the difficulty of obtaining well-controlled observations of subjects of known genetic backgrounds tested at the same time and at the same ages who have lived under well-defined environmental conditions. Thus, research study has been piled upon research study, but they differ significantly in population and controls. The studies that provide evidence for the greater influences of heredity are found to have certain

"fatal flaws" when examined by proponents of the environmentalist camp, and vice versa.

The history of research on the inheritance of mental ability can be traced back for centuries. One of the more interesting studies was that made by Francis Galton in the nineteenth century. Galton was a grandson of Erasmus Darwin and the cousin of Charles Darwin (an interesting example of three famous men in the same family occurring in three generations). He became interested in the observation that genius seemed to run in families. In his own highly creative work Galton developed a program to identify men who could be called "eminent." After establishing his criterion of eminence, he calculated the frequency of occurrence in the population at large. Using this figure as a baseline, he then looked for the frequency of occurrence in families in which one member had been identified as eminent. He found that the rate of achievement of eminence in such families was much higher than in the population at large. He also found that, the closer the family relation to the eminent man, the greater was the likelihood of becoming eminent. Galton recognized that this kind of study, by itself, was inconclusive, since those who were closest in relationship to the eminent man were most often the closest to him in a physical sense and thus might share in whatever effects a beneficial environment might provide. Thus, there would be a confounding of genetic and environmental factors.

One of the indications of the genius of Galton was his ability to find ways to test his hypothesis that genetic factors were important for attaining eminence. He accumulated evidence to show that the rate of attainment of eminence was no higher in America than in England, despite the higher educational levels in the United States. In a more unusual analysis he found that the adopted "children of the Pope," who were given every kind of educational and social advantage in the schools of the Vatican, achieved positions of eminence less frequently than did the relatives of eminent men. Another innovation of Galton's was his use of the study of twins. He recognized the difference between similar and dissimilar twins, although he did not have enough information to know that there were in fact two kinds of twins—identical and fraternal.

STUDIES OF FAMILIES The evaluation of genetic influences upon intelligence has usually taken advantage of the fact that

identical twins have the same genetic material and that fraternal twins have more dissimilar genetic determinants than identical twins but are more alike than pairs of brothers or sisters. It was believed that comparison of the similarities of identical twins and of fraternal twins would demonstrate possible differences in genetic backgrounds. It should be noted that this argument assumes the presence of essentially similar environments, both in the uterus before birth and in the external world after birth, for both kinds of twins.

It would appear that both heredity and environment play important roles in determining the measured intelligence of an individual. Research findings indicate that the differences in measures of intelligence are greater for fraternal than for identical twins and that certain types of performances required on intelligence tests are more greatly influenced by heredity than other types of performance [12]. Another finding is that the correlation between the intelligence scores of adopted children and the scores of their "true" parents is greater than the correlation between their scores and those of their adoptive parents [13]. The correlation of an adopted child's intelligence test score and his true mother's intelligence level remains relatively constant despite the fact that the absolute intelligence scores of the children exceed the absolute scores of their mothers [14]. The fact that the children's scores are higher may reflect the effect of a more favorable environment for the development of the child's intellectual capacities.

The size of the obtained correlation depends upon the relative similarities in environmental experiences to which children are subjected. For example, it has been shown that when *unrelated children* are adopted into the same home, their intelligence test scores correlate about .65 [15]. This degree of correlation is comparable to that of siblings reared together [16]. It is also close to the size of correlation usually reported for fraternal twins [16]. It should also be noted that, in the study cited above [14], it was found that when foster children were adopted into homes that were superior in socioeconomic status to that of their true parents, the correlation in intelligence test scores between these children and those of their true parents was .00. When siblings are reared apart, their intelligence test scores are much lower than when they are reared together [15]. Finally, it should be noted that a favorable environment is reflected in the gradual increase in measured intel-

GENETIC RELATIONSHIP	△ REARED APART / O REARED TOGETHER	DEGREE OF CORRELATION
		0.00 0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80 0.90 1.00
UNRELATED PERSONS	△	0.01
	O	0.23
FOSTER PARENT-CHILD		0.20
PARENT-CHILD		0.50
SIBLINGS	△*	
	O	0.49
DIZOGOTIC TWINS	OPPOSITE SEX	0.53
	SAME SEX	0.53
MONOZYGOTIC TWINS	△	0.75
	O	(THE VERTICAL BARS REPRESENT THE MEDIANS.) 0.87
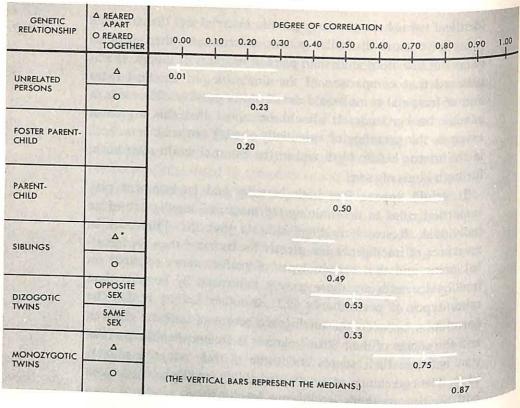
FIGURE 8.1 *Medians and ranges in correlation coefficients for "intelligence" test scores from 52 studies. Asterisk indicates insufficient studies to obtain a median. Adapted from L. Erlenmeyer-Kimling & L. F. Jarvik. Genetics and intelligence: a review.* Science, *1963,* 142, *no. 3595, p. 1478. Copyright 1963 by the American Association for the Advancement of Science.*

ligence; this has been found in Negro children who moved to the North from relatively poor environmental experiences in the South [17].

Such findings leave no doubt that environment plays an important role in the manifestations of intelligence as measured by our current tests. They suggest, too, that the effectiveness with which an individual functions is significantly influenced by the experiences to which he is subjected—especially experiences during the formative periods of his life.

Another important question is whether or not there are genetically established differences between Negroes and whites. This issue has not been completely settled. There are reports which show consistent, although minor, differences among the racial groups [e.g., 18, 19]. Some psychologists believe that

these small differences may represent genetic differences in psychological functions. The majority of psychologists believe, however, that these differences reflect the superior educational and family backgrounds of the white subjects tested. In any case, measured differences among racial groups produce such small differences in measured scores that they are insignificant when compared with the much larger variability within any racial or ethnic group.

Considering the problems inherent in establishing equivalent groups in terms of genetic makeup as well as in terms of favorable educational and emotional environments, it would seem that any attempt to establish the relative contributions of the genetic or environmental contributions to intelligence would be futile. Perhaps the best way in which to view the problem would be to say that nature, in terms of the hereditary material, sets an upper limit of intellectual capacities which can be approximated more or less closely by more or less favorable environmental circumstances.

Figure 8.1 summarizes the findings of fifty-two studies in which correlation coefficients in intelligence were obtained for different types of genetic relationships.

The Dimensions of Intelligence

One question that has been a source of controversy among psychologists for many years, in fact since the pioneering work of Binet, is whether or not intelligence should be viewed as a "single dimension" of "behavioral effectiveness" or whether it should be viewed as a collection of many highly specific characteristics. As will be noted below, in our discussion of the tests commonly used to measure intelligence, most instruments have various subtests whose scores are "summed" to determine an overall index of intelligence. The mere existence of the subtests, which usually are made up of apparently similar tasks, reflects the view that there are separate kinds of abilities, each contributing in its own fashion to intelligent patterns of behavior.

Historically, Binet believed that intelligence was a very complex, multifactored ability and designed a test which had items of all kinds and varieties of tasks in the hope that, by using a large number of such items, the likelihood of sampling the appropriate dimensions of personality would be high. On the

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other hand, Galton believed that intelligence was a unitary characteristic of the individual.

In England the psychologist Spearman argued for the concept of a general intelligence variable at the turn of the century. He called this global factor "g," although he did not maintain that this was the sum total of all intellectual abilities. This theory of a general intellectual ability was also dominant in American psychology until about 1938, at which time Thurstone attacked the concept of "g" by presenting evidence that no such global factor existed when the responses of individuals to a battery of tests were analyzed by a statistical method called "factor analysis" [20].

FACTOR ANALYSIS: THE METHOD Factor analysis is a statistical procedure which can be used to obtain a description of sets of dimensions or factors which describe a given set of data in new ways (see pp. 197–202). Often these factors are thought to represent fundamental or basic dimensions on which people, or tasks, exist and which can only be observed by the use of special techniques. However, this is not warranted, and the results of factor analysis only produce a set of hypothetical factors derived mathematically from the data used in the analysis. Since they are derived by known mathematical procedures and their application is compatible with mathematical rules and assumptions, there is an appealing logical basis for the use of factor analysis. Nevertheless, there are many kinds of assumptions one can make about the mathematical models involved, and these assumptions make vast differences in the outcome of the analysis. Thus, there are many kinds of factor analyses, and on a logical basis there is little reason to prefer one over another. The important criterion of the factor-analytic method is its usefulness to us as students of behavior.

Despite the difficulties inherent in factor analyses, some psychologists believe that the factors produced by a given method represent psychological realities. The factors have been thought of as "entities"—primary, fundamental attributes of behavior. Other psychologists tend to think of factors only as more or less useful descriptive devices for understanding and cataloguing behavior. This latter, more conservative viewpoint seems to be more in keeping with the difficulties inherent in the final resolution and interpretation of the results obtained from the method.

All of the foregoing has had as its purpose the establishment

of sufficient background to discuss a much debated issue about intelligence: Should intelligence be viewed as a single attribute of the person, or should it be viewed as a collection of independent attributes, each of which is significantly related to performance?

INTELLIGENCE: HOW MANY FACTORS?   The differences which exist among individuals in the expression of intelligent behavior have always been recognized. The question is, "How should these differences be expressed?" When factor analysis was developed, it was hoped that this method could be used to describe more perfectly the number and nature of dimensions on which intelligence is exhibited.

One of the earliest of the leaders in the mental test movement, Spearman, postulated a two-component theory of intelligence [21]. He believed that every person has a number of highly specific abilities but that there is a positive correlation among the specific abilities. This correlation among specific attributes was thought of as the second component, a general factor of mental ability which he labeled "g." Actually, there can be no doubt that each of us has developed highly specific techniques for dealing with our environments. These represent the highly specific characteristics described by Spearman. However, Spearman noted that there were families of abilities, usually clusters of similar specific abilities, which represented something more than the idiosyncratic sets of specific characteristics and something less than the "g" factor.

As noted above, it was in 1938 that an attack was seriously made upon Spearman's "g." In this year Thurstone presented data from factor analyses of intelligence tests which seemed to prove that a general factor, operating among specific factors, did not exist [20]. Thurstone found a set of factors which were like families of specific abilities. He called these factors the Primary Mental Abilities. Some of these factors were:

V = verbal comprehension
W = word fluency
N = numerical ability (speed and accuracy in simple arithmetic operations)
S = spatial relations
M = associative memory
P = perceptual speed
I = inductive reasoning

These factors have been found in many subsequent factor analyses and can be thought of as common dimensions among mental test results. However, Thurstone's factors were found to be correlated with each other [22], and of course it was just this sort of correlation among abilities which had been the basis of Spearman's "g." Furthermore, many other studies produced data from which it became apparent that some general correlation is usually found among the responses of subjects to batteries of intelligence test items. Thus, it is perhaps best to conclude that intelligent behavior can be thought of as existing at three levels:

1. Highly specific individual patterns of responses to specific situations.
2. Families, or groups, of specialized responses, as represented in Thurstone's Primary Mental Abilities.
3. A general factor representing the correlation among the more specific characteristics of levels 1 and 2.

Given these three levels of intelligence, one can then ask, "To what extent are measures at each of three levels useful in predicting behavior?" After examining the nature of samples of subjects used by different investigators, Hunt concluded that while the most specific factors (level 1) are seldom likely to be of use in predicting behavior, the group factors (level 2) tend to be more useful in older children and adults, whereas the general-ability factor (level 3) is more useful in young children [23]. Furthermore, it appears that we should not look upon the level 2 factors as indicative of any necessary, absolute, and unalterable dimensions of behavior. Rather, they would appear to be only more or less useful descriptive categories which may be modified over time through experience or training.

Some Widely Used Tests of General Mental Ability

A great many tests of intelligence have been developed since Binet's early instrument, and volumes would be needed to describe and evaluate them all. There are many technical factors that the psychologist considers in selecting a test, or a battery of tests, when evaluating an individual or a group. Careful evaluation of intelligence requires more than the proper administration of a "standard" test. The test must be suitable

for the individual in terms of his social and cultural background, in terms of his age and intelligence level, and in terms of his general physical, sensory, and linguistic development. For example, the Stanford-Binet Scale would not be suitable for the intelligence evaluation of a foreign-born adult recently arrived in the United States because his linguistic and social experiences would be quite different from those upon whom this test was standardized. As another illustration, this test would not be suitable for a deaf or a blind individual, since it assumes normal sensory capacities and experiences.

Our purpose in this section will be to introduce the student to some widely used tests of mental ability and then to discuss some problems in their administration and interpretation.

CLASSIFICATION OF INTELLIGENCE TESTS As we have already learned, tests may be designed for administration to individuals or to groups. Some tests can be used either way. Hence our first major categorization of such tests is: *individual vs. group.* The next general category involves the content of the tests. Some tests involve the use of language. They require comprehension of oral or written directions and the capacity to make oral or written responses. Other tests do not use verbal content. The subject responds to items which require perceptual discriminations, manipulation of objects and materials, and other nonverbal responses. Test instructions can be given in pantomime, although a limited use of oral explanation, of a very simple kind, may also be employed. Thus our second category of tests, based on content, is: *verbal vs. nonverbal* (or performance).

The third category of tests is based on the age and intelligence level of the subjects. Some tests are useful with people over a restricted range of age, while other tests attempt to measure individuals of widely varying ages. However, when a test is restricted to a specific range of ages (and hence to a restricted range in mental maturation), it may be classified on this basis. There are *infant tests, tests for children,* and *tests for adults.* Some tests, like the Stanford-Binet Scale, include materials suitable for a wide range of ages. Such tests may be called *wide-range* tests.

There are other categories of tests which are occasionally used. For example, since some tests emphasize speed of response while others emphasize power (level of attainment), tests may be categorized as *speed tests* or *power tests.* In

general, the classification of a test tells us something about the population for which it is designed and something about its content or nature.

THE STANFORD-BINET INTELLIGENCE SCALE; L-M FORM

This is an *individual* intelligence test, essentially *verbal* in content, and applicable through the *age range* from two years, six months to eighteen years [24]. It is called the L-M form because it represents a combination of most of the better items from the 1937 edition of this scale, which contained two forms, L and M. It had been found that, with the passing of time, some of the items from the older scales were inappropriate because of changes in cultural conditions which were important for answering the questions correctly. Other items omitted were either too easy or too difficult. The 1960 edition was made up of the most discriminating and relevant items from the earlier scale. In standardizing the new form (testing the items for validity and age placement), 4,498 subjects were examined. Two criteria of objective validity were used: (1) an increase in the percentage of subjects passing the item with increasing age of the subjects; (2) high correlations of the separate items with the total test score.

The items of this scale are placed at "age levels," i.e., each item is placed at a year level for which it is appropriate in terms of difficulty. In the standardized administration of the test, the examiner begins his test with that age level at which he believes the subject can pass all of the items. He then continues his testing at higher age levels until he reaches that level at which the subject fails all of the items. The assumption is made that the subject would have passed all items from levels below the one at which he passed all items (the *basal age*) and would have failed all items above the level at which, in fact, he failed all items (sometimes called the *maximal age*). Thus the assumption that items are well ordered on the basis of mental age required to pass the items is an important one. If the examiner has reason to suspect that the assumption is not valid, he may test below the basal age or above the maximal age.

After the administration of the test has been completed, the examiner calculates the subject's I.Q. score. In the older editions of this test, the subject's mental age was first obtained by use of the following steps. Starting with the basal age, additions were calculated in terms of proportion of tests passed at higher

age levels. Then, the usual formula for I.Q. (M.A./C.A. × 100) was applied. In the 1960 edition, however, conversion tables are provided for obtaining I.Q. scores from the raw score based on the number of items passed at different levels.

The content of the test varies at the different age levels. In part, this is inevitable with a scale that extends over a wide chronological age range and tests abilities from the lowest levels of brightness (*mental retardation*) to the highest levels of brightness (*very superior* or *genius*). In infancy, some mental functions have not emerged or are so primitive that they cannot be tested very effectively. According to Terman, at the upper age levels, intelligence is chiefly manifested in the ability to perform conceptual thinking. He therefore believed that language, which is "the shorthand of the higher thought processes," is "one of the most important determinants of the levels of the processes themselves" [9]. Therefore, at lower levels of chronological age, this important dimension of intelligence can only be inadequately tested.

Test content has been classified in many ways. A useful classification of test content was tentatively proposed by Porteus [25]. He grouped the items on the basis of the kinds of mental functions they seemed to measure. These are:

1. *Memory* (ability to repeat a series of digits, ability to repeat sentences of varying lengths, ability to reproduce visual designs, etc.)
2. *School attainments* (items involving arithmetic ability and reading)
3. *Verbal ability* (vocabulary, verbal reasoning, verbal comprehension, etc.)
4. *Common knowledge* (problems of fact; interpretation of pictures, ability to evaluate similarities among different concepts, detection of absurdities in pictures)
5. *Practical judgment and abilities* (tests of manipulative skill, ability on form boards, ability to draw, etc.)

The Stanford-Binet Scale is both verbal and nonverbal, although the relative contribution of each of these aspects varies at the different chronological age levels. McNemar, in attempting to construct a nonverbal test using the items from this scale, found that there were no truly nonverbal items, or almost none, at age levels VII, XI, and XIV, and that the test was essentially verbal [26]. As might be expected, the validity of the test, as

judged in terms of specific predictive criteria, varies at the different age levels.

The primary purpose of this test, like the original test by Binet and Simon, was to predict progress in schoolwork. Extended research over the years has demonstrated that the test

FIGURE 8.2 *Administration of bead-chain test from the Stanford-Binet. The examiner first makes up a chain in a particular pattern using wooden beads of different shapes. He removes it from sight, and then asks the subject to reproduce the pattern from memory.*

does this very well. However, many psychologists have objected to the test as a measure of "general intelligence" precisely because it is essentially a scholastic-aptitude test; that is, it both samples and predicts scholastic ability [23]. In any case, its predictive validity for school accomplishment is limited at the lower age levels, and it has limitations with individuals who are not similar in cultural and educational background experience to the standardization group.

THE WECHSLER INTELLIGENCE SCALES These scales are among the most widely used individual intelligence tests in this country. They are based on different assumptions about the nature of intelligence and on different methods of test construction than the Stanford-Binet. Moreover, they came into being because of different needs. Whereas Terman was interested in predicting school performance, Wechsler was more interested in the usefulness of his test as a clinical instrument.

At present there are two Wechsler scales: the Wechsler Adult Intelligence Scale (commonly designated the WAIS) and the Wechsler Intelligence Scale for Children (commonly designated the WISC). These tests are outgrowths from and revisions of the original Wechsler-Bellevue Scale (1939) and the modified Wechsler-Bellevue Scale (1949). These earlier scales were intended primarily for adults, since it was felt that the Stanford-Binet was of limited usefulness in the adult range. More important, Wechsler wanted to develop a test that would be more useful in clinical practice. In such work it was often necessary to evaluate the level of intelligence of patients with quite diverse social-educational backgrounds, with limited use of the English language, and with various psychiatric and physical handicaps. One of the methods used to evaluate the test, both during its construction and, later, in research on its validity, was to compare the measure of intelligence which it yielded with the judgment of the psychiatrist and the clinical staff (a method referred to as "concurrent validity").

Wechsler's clinical work at the Bellevue Hospital in New York City often was concerned with the evaluation of illiterate people, social misfits, psychiatric cases, and patients who were suspected of having seriously impaired mental functions. This orientation undoubtedly motivated him to construct a test that would (1) contain ample nonverbal content and (2) have samples of sufficiently different mental functions so as to permit better clinical evaluation based on variability among the functions. Later we shall have more to say about each of these functions of the test. At this point it is sufficient to emphasize Wechsler's orientation for the test so as to understand something of the basis of its difference from the Stanford-Binet.

Our discussion will be limited to the WAIS, but the theory of test construction and the test's content and applicability are quite similar to the WISC. The WAIS was published in 1955. It consists of two sections, a Verbal Scale and a Performance Scale. Each of these two scales consists of several subtests. The WAIS is not an age scale, like the Stanford-Binet; the items of the test are not grouped by chronological age. Instead, it is a *point scale,* and the items are grouped in terms of similar content into a number of subtests, arranged in each subtest from easiest to most difficult. Subjects are usually given *all of the subtests,* and *all of the items within each subtest,* until items are reached which are so difficult that none are passed. A score on

the test consists of the number of points a subject has earned on each subtest. These subtest scores are converted into *standard scores* for each subtest (so that the scores from all subtests are comparable).

The *Verbal Scale* consists of six subtests: Information, Similarities, Comprehension, Digit Span, Arithmetic, and Vocabulary. The Information subtest contains items the adult is presumed to have learned about in the course of everyday experience, for example, who is President of the United States and what is the population of the United States. The underlying theory is that the ability to learn and remember such information is correlated with intelligence. The Similarities subtest requires the analysis of similarities between words. For example, the subject is required to tell how air and water are alike. The Comprehension subtest involves "common-sense judgments." The Digit Span subtest contains a series of digits. The subject is asked to repeat them from memory after they have been spoken by the examiner. This subtest also contains another series of digits which subjects are asked to reproduce in reverse order. The Arithmetic subtest has items requiring arithmetical reasoning which the subject solves without the use of pencil and paper. The Vocabulary subtest is just that—the subject must explain the meaning of words. Wechsler recommends that the Vocabulary subtest be considered an alternate when one of the other subtests is not applicable, and that each subject, therefore, be given only five of the six subtests from the Verbal Scale.

The *Performance Scale* consists of five subtests. There is a Block Design subtest in which subjects are asked to make designs with colored blocks which resemble those shown on test cards. A Picture Arrangement subtest requires subjects to arrange cartoon-like pictures printed on cards so that they tell a story in pantomime. There is a Picture Completion subtest in which subjects are asked to tell what part is missing from each of a set of pictures. An Object Assembly subtest requires subjects to put together pieces of wood to form a profile of a face, or a hand, or other figures. There is a Digit Symbol subtest in which subjects are asked to follow a code and fill in symbols for a large number of digits as rapidly as possible, using a code system given at the top of the page.

Subjects earn a point score on each subtest. These are then converted into standard scores. The five scores for the Verbal

FIGURE 8.3   *Administration of the Block Design Test from the WAIS. Courtesy of The Psychological Corporation.*

Scale are then summed, and by means of a conversion table provided for the age group of the subject a Verbal I.Q. score is obtained. A Performance I.Q. score is similarly calculated. Finally, the total score, based on all of the subtests, is converted into a Full Scale I.Q. score.

Now let us examine some of the distinguishing features of this test. In the first place, we note that it places equal emphasis upon verbal and nonverbal content, unlike the Stanford-Binet, which heavily emphasizes verbal content. An approximate I.Q. score can therefore be obtained even when the subject is unable to respond in English. Perhaps more important is the assumption that equal weight should be given to verbal and nonverbal aspects of mental ability (i.e., in the Full Scale I.Q. score). This raises the question as to the degree of relationship between the two major components of the scale. This relationship between verbal and nonverbal components varies slightly in different age groups. In general, verbal and nonverbal I.Q., as measured by

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the test, correlate about .80 [27]. This would indicate that these scales have much in common. However, the Verbal I.Q. correlates with the Stanford-Binet about .75, while the Performance I.Q. correlates with Stanford-Binet only about .65. Since reliability for each of these measures is very high, it appears that the Verbal I.Q. score is more closely related to the Stanford-Binet I.Q. score than is Performance I.Q. score. Typical findings also indicate that the Full Scale I.Q. score correlates about .80 to .85 with the Stanford-Binet. In general, therefore, it appears that WAIS and Stanford-Binet are closely related. However, two important differences emerge when results are more closely inspected. The first is that the correlations reported above are not found when groups of adults who are exceptional in background educational or cultural experience are compared. The second is that when I.Q. scores obtained by these tests on the same subjects are compared, the Stanford-Binet yields higher I.Q. scores for superior subjects and the WAIS yields higher I.Q. scores for inferior subjects. Considering all of these findings, it appears that the two tests do not entirely measure the same phenomena and that the Performance Scale of the WAIS measures different aspects of the intellectual processes than does the Stanford-Binet.

The latter conclusion is reinforced by factor-analytic studies of responses to the WAIS. For instance, in one study ten factors were isolated which corresponded roughly to the ten subtests [28]. Another study showed that, with increasing age of subjects, fewer factors could be isolated, but, even at ages above 55 years, at least three factors were necessary to account for the data. These factors were labeled verbal-abstract, concrete-performance (i.e., motor and nonverbal), and immediate memory. [29]. Since a number of different factors were obtained, Wechsler did accomplish one of his original purposes: to provide a richer and different sampling of mental functions than the Stanford-Binet.

Another important difference of the WAIS from the Stanford-Binet lies in the fact that the same items of the scale are given to subjects of every age. This allows for more effective comparison of subjects at different age levels. And still another difference between the tests is that ten different subtest scores, directly related to one another, are available. Only one score is available for the Stanford-Binet. This last point requires some amplification.

From a clinical viewpoint, the availability of ten subscores on the WAIS, if these are relatively independent, leads to certain important possibilities. For example, if personality disturbances differentially affect different subtest scores, there is the possibility that uneven patterns of scores on the subtests may be diagnostically useful in detecting such personality problems. As one example of such phenomena, it has been shown that high anxiety levels influence the subtest results differentially. Hence, the test can be used in evaluating the presence of intense anxiety that may not be overtly or clinically observable. It has also been shown that wide differences in I.Q. scores obtained from the Verbal and Performance scales are indicative of other kinds of personality disorders, depending upon which score is higher. For example, such results may involve mental deterioration due to disease, atypical background experiences, or severe inhibition of interpersonal relations. The careful clinician must be very cautious, however, in drawing conclusions from the pattern of subtest scores alone, especially if the pattern is not highly irregular. Rather, he will consider his formulations as working hypotheses to be checked carefully against other clinical and life-history data.

OTHER TESTS OF INTELLIGENCE The Stanford-Binet and Wechsler tests are examples, not only of very widely used intelligence tests, but of very carefully standardized tests. Great care was used in selecting items for these tests, in obtaining representative samples for trying out the items, in item placement, and in developing suitable norms or scoring systems. Detailed manuals of instructions for administering, scoring, and interpreting the results have been prepared. There are a number of other well-developed individual and group intelligence tests which differ in some important respects from these two. The research psychologist and the clinician give much thought to the problem of selecting the type of test most suitable for the population to be tested and most appropriate in terms of the uses to which the test results will be put. We shall now examine very briefly a few other tests in order to provide some appreciation of the variety available.

Tests for infants A number of standardized tests of "mental development" are available for infants. It is possible to obtain measurements of rate of development as early as 18 days of age. However, such tests are not likely to measure the same

Measuring an infant's response. Guy Gillette

kinds of functions measured by intelligence tests designed for use with older children and adults. This is due to the fact that until certain mental processes have developed to the point at which they are measurable, no amount of ingenuity on the part of the tester can assess them. Tests involving reasoning are not applicable until this ability has matured and until the subject is able to give sustained attention to the task of problem-solving, can comprehend complex directions, and, for many tasks, can employ verbal concepts with some degree of facility. Of course, it is possible that certain infantile behaviors could be good

predictors of the operation of these immature abilities. For example, age of crawling could be correlated with mental reasoning as tested in later childhood. The failure to obtain high correlations between infant scores and test scores of intelligence in later years makes this a remote possibility. Another factor which makes prediction of later mental development from tests administered during infancy difficult is that the reliability of the measures is relatively low. In turn, this is due both to the variability in development of mental abilities during infancy and to the obvious difficulties in obtaining co-operation from the very young subjects during testing.

One of the most widely used developmental schedules for infants and young children is that developed by Gesell and his co-workers at Yale University. (At present there is a separate unit called the Gesell Institute of Child Development.) There are four basic schedules, with an age range from four weeks

FIGURE 8.4 *Test materials for the Gesell Developmental Schedule. Courtesy of The Psychological Corporation.*

through six years, which are based on longitudinal studies of the same children. The schedule of *motor* development includes the behaviors of creeping, walking, and other more mature forms of motor behavior. The schedule of *adaptive behavior* includes items involving visual and other sensory stimuli and requires the infant to make some adaptive response to them, such as responding to a dangling object. The *language schedule* includes items of communication and comprehension as well as the

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child's total response to such situations. The *personal-social* schedule includes response to social situations, including feeding, playing, and toilet habits. The responses in each area of development are evaluated on the basis of norms for age groups and are interpreted in terms of the relative degree of acceleration or retardation in each area. In effect, these schedules, based on the concept of construct validity, are a refined method of observation of commonly used items of behavior. No single, over-all measure of developmental rate is furnished.

In contrast to the Gesell Developmental Schedules is the *Cattell Infant Intelligence Scale,* which is a formal intelligence test for ages two to thirty months. It consists of some items from form L of the older Stanford-Binet, some items from the Gesell Schedules, and some original items developed by Cattell. At the lowest levels the test depends essentially upon sensory-motor tasks, but at the upper levels more complex mental phenomena are evaluated. The test yields an I.Q. score. Both the author and other researchers have found the test to have very little predictive value when given to children below one year of age [30]. After the first year the test shows a low correlation with the Stanford-Binet, but it is very limited in predicting later I.Q. scores on intelligence tests within the school age range [31].

In general, it has been found that infant tests of intelligence are most useful for research purposes and for clinical evaluation of abnormal development and adjustment. They have very limited predictive validity for mental ability in adulthood. They are most effectively used by experienced observers and clinicians, who evaluate the responses to test items, together with other information, to make important *qualitative* judgments of the infant's behavior in arriving at a better understanding of his current adjustment and development.

Intelligence tests for special purposes A number of tests have been developed to serve purposes other than the prediction of scholastic success. We shall discuss two of these "intelligence tests." The quotation marks are used because there are many who would disagree that some of these tests measure intelligence as the term generally is understood.

Porteus published his test, the *Porteus Maze Test,* in 1915 and reviewed most of the research done with the test since that time in his book published more than forty years later [32]. As the name implies, this test consists of a series of mazes of

increasing difficulty. The mazes are printed on paper, one to a
page, and the subject is required to trace a path with a pencil
from a starting point to the exit from the maze. The age range
of the test is from the three-year-level to the adult level,
although Porteus and other workers agree that the test does not
discriminate different degrees of intelligence at the adult level.
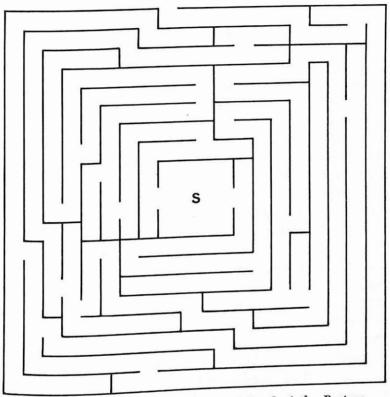
FIGURE 8.5 *A maze from the adult level of the Porteus
Maze Test. Courtesy of Dr. S. D. Porteus and The Psycho-
logical Corporation.*

Porteus developed this test, in part, because he was dissatis-
fied with what he thought was an overemphasis in other intelli-
gence tests on verbal ability and scholastic achievement. He
wished to have a test that would emphasize "common sense,"
instead. He believed that good performance on the mazes
involves "prudence" and "foresight," or planning ability. His
clinical experience involved the evaluation and guidance of
mental defectives, and he believed that their progress could be
predicted more accurately on the basis of a test which measured
the "social sufficiency" of his subjects rather than on the basis

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of one that relied exclusively upon verbal reasoning. Over the years it has been learned that verbal tests of intelligence, like the Stanford-Binet, predict educational progress better, while the Porteus predicts social and "practical" adjustment better [33]. Some workers regard the test as a measure of social maturity. It is most widely used in the assessment of retarded individuals and delinquents.

Two scores are available. One is a mental age based on the age level of the most difficult mazes which the subject can complete successfully. The other is a Q score. This is based on qualitative aspects of the subject's performance: evidence of slovenliness and impulsivity, evidence of disregard of instructions, and evidence of careless habits of work. The Q score may be of value in predicting effectiveness in some real-life situations, such as the ability to work at a job efficiently [32, 33]. Thus, Porteus was able to demonstrate that his test bore out a judgment made by Thorndike, another famous educational psychologist, that a test of mental functions that was less verbal than the widely used verbal intelligence tests would be a better predictor of "practical adjustment" [34].

Another type of special-purpose "intelligence test" is the *Peabody Picture Vocabulary Test*. It consists of a series of pictures. The subject is asked to indicate which of four pictures, in each instance, represents the best response to a stimulus word (vocabulary). It takes only about fifteen minutes to administer and does not require verbal responses by the subject. It was designed to test the intelligence of individuals who were physically or verbally handicapped, and it has been used most extensively with institutionalized children, particularly mentally retarded individuals.

This test has a fairly good correlation with the Stanford-Binet (correlations of about .70 are usually reported). It does predict scholastic performance of mental retardates with some degree of success [35], and, although it has limited reliability in the higher ranges of mental retardation, it has been found to be a useful test in cases in which other tests are not applicable.

PROBLEMS OF ADMINISTRATION AND INTERPRETATION It is not difficult to see that the proper administration and interpretation of intelligence tests are complicated problems requiring a great deal of technical competence and special training. We shall highlight a few of these problems in order to introduce the
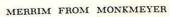
Testing.

student to some interesting complexities of this area. No matter how valid a test may be for some specified purposes, it is only through the appropriate selection of a test (or tests), its competent administration and scoring, and, above all, through expert interpretation of the results in the light of the individual's particular situation that meaningful results may be expected.

We have already indicated that the test must be selected so that it is suitable in terms of similarity in background between the standardization population and the subject. In addition, the test must have demonstrated validity for the criterion to be predicted.

The administration of a test poses other problems. Aside from familiarity with the specific instructions for administering a particular test, the examiner must be alert to a number of other factors. One of these is the *motivation of the subject.* Infants are naturally unco-operative and easily distracted. Psychopaths frequently resist taking any tests. Many people are unduly afraid of taking intelligence tests because they do not wish to expose suspected deficiencies or limitations. The examiner must take the motivational condition of the subject into careful consideration and either provide suitable conditions to motivate him effectively or, failing this, make appropriate allowance for the unsatisfactory condition. In some instances it may be impossible to obtain meaningful results, and no evaluation can be made. In any case, the results of the test are always influenced, sometimes more and sometimes less, by the nature and intensity of motivation of the subject. This must always be considered in interpreting results. As Mandler and Sarason have indicated, people with high anxiety drives are not likely to obtain intelligence test scores that are truly commensurate with their abilities [36].

Another factor concerns the physical condition of the subject. Sensory deficiencies may interfere with performance on some tests. Fatigue may be another debilitating factor. Physical illness may reduce either rate or accuracy of performance. Again, as with motivation, the examiner must make allowance for such conditions and qualify his evaluations accordingly. In doing this he may make use of research findings with the test given under varying conditions, and he may use his own research or clinical experience with the test.

A special problem concerns the possible influence of type or degree of psychopathology upon intelligence test performance.

Obviously, psychiatric patients who are highly distraught or who are psychologically inaccessible present very special problems in assessment. But even the usual test directions may have differential effects upon subjects who are only moderately disturbed. For example, Hutt compared the intelligence test results obtained with the Stanford-Binet Scale given, under two conditions of administration, to children who differed only moderately in adjustment [37]. All children were given the specific items of the scale under precise conditions of the test administration by expert examiners, but the experimental group was given the total test by what was called the "adaptive method," while the control group was given the test under standard conditions, or as it is called, the "consecutive method." The essential difference between these two methods is that, in the former, the *order of the items* of the test is so administered that failure and success experiences on the test are alternated, whereas, in the latter, the order of the items is such that there is a progression from easiest to most difficult items. Hence, in consecutive testing, the child is faced with a constantly increasing, and therefore frustrating, series of test experiences. When the results of the two types of testing sequences were compared, it was found that there was no significant difference in average I.Q. scores under the two conditions. However, when the total of 640 cases was subdivided into extreme groups of well-adjusted and poorly adjusted children—equated, on other bases, in intelligence levels—it was found that a group of poorly adjusted children, when tested consecutively, obtained I.Q. scores that were 18 points lower than a group of poorly adjusted children who were tested adaptively. This and other related findings indicate that the usual test administration unfavorably and significantly depresses the I.Q. when subjects have a relatively poor adjustment.
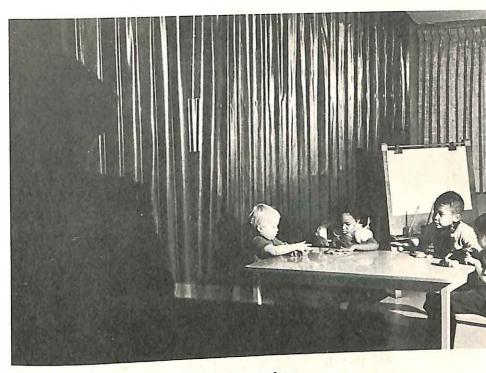
Still another general factor involved in test administration concerns the characteristics of the examiner: sex, skin color, appearance, personality attributes, and the like. There is little doubt that these characteristics may influence the obtained I.Q. score and must therefore be taken into consideration in evaluating the meaning of the results of the testing.

When we turn to interpreting test results, we encounter many problems that are too technical to discuss effectively in an introductory text. We can note, however, that far more than an evaluation of the numerical scores is involved. The qualitative

aspects of performance need to be fully considered in order to arrive at a proper appreciation of what the scores represent. For instance, two subjects may both fail an item such as, "Why should you avoid going around with bad company?" But one subject may say, "I don't see any reason why you shouldn't go with bad company," while another may respond, "Because they are all older than you." Answers such as these may give the examiner insight into the nature of the person's mental processes as well as provide information about his values and attitudes.

Interpretation really implies that there has been a careful review of the test findings, both quantitative and qualitative, considered in the light of the conditions under which the test was given, and evaluated in terms of the subject's own personal history. Moreover, it may be necessary to consider the findings from a particular test, or test battery, in relation to other measures of intellectual functioning and effectiveness. Finally, this total evaluation must be summarized in terms of various possibilities and contingencies under which the predictions are likely to be true or false. In short, the judgment of the examiner plays an important role in interpreting the results of even the best-constructed tests for a particular individual who is being assessed.

The Measurement of Personality

Considerable research effort and ingenuity have gone into the development of methods of measuring personality reactions. These methods range all the way from *objective tests,* which attempt to devise questions which can be scored entirely objectively, through *standardized interviews,* the response to which can be coded for relatively objective scoring or which can be evaluated clinically or subjectively. In between there are *projective tests, observational procedures,* and *role-playing procedures* —each of which provides data about the behavior of people. These methods vary on the dimension of objectivity of the analysis. They also vary in other ways: type of data elicited, degree of reliance upon normative information, and types of evaluations that may be made. All measurement techniques have in common the aim of providing more precise and more valid measures of well-defined aspects of personality reactions.

The one-way screen: an observational procedure.
Merrill Palmer School

We shall discuss some examples of objective and projective methods of assessing personality. Our aim will be to provide some insight into the kind of theoretical and methodological issues which are involved as well as some knowledge of the kinds of evaluations which are possible.

OBJECTIVE TESTS OF PERSONALITY Objective tests of personality attempt to eliminate the need for subjective evaluations made by the examiner. They also attempt to minimize the effect of the examiner upon the responses which are obtained from the examinee, which, as we shall see later, may be considerable in some kinds of assessment. Often this is done by giving the subject a paper-and-pencil examination, using a standard form with carefully prescribed instructions in a neutral setting. Evaluation of personality characteristics is accomplished by counting the responses to certain sets of questions in much the same way that intelligence test scores are determined. In theory, many dimensions of personality can be evaluated by the same

questionnaire, although how many useful dimensions can be abstracted from any single test is a matter for empirical research.

The aim of developing objective tests for personality assessment is to eliminate or reduce the presumed error of human judgment of the examiner. Advocates of the objective instruments might argue that, through the use of objective scales, items which serve a useful role will be determined through correlations with empirical criteria. Predictions from the tests can be unequivocally tested. Furthermore, the test is entirely public and communicable, characteristics which are desirable for any "science of behavior."

With an enthusiasm based in part on the considerations just mentioned and in part upon the general movement of Behaviorism, which minimized the importance of subjective phenomena generally, many tests of personality were developed in the 1930's and 1940's. Like the tests of intelligence, many were developed to assist the military services select individuals during periods of wartime crisis. For example, one of the first scales was that developed by Woodworth during World War I [38]. Psychiatric descriptions of traits found in neurotic or psychotic patients were made into a questionnaire of 116 items. Subjects were asked to rate each item as it applied to themselves.

Most objective personality scales are self-report in nature; that is, subjects indicate which of the items apply to themselves or how frequently they "have" a characteristic described in an item. In short, they provide self-descriptions in an objective way by indicating applicable attributes.

A moment's reflection will make it obvious that the number and types of questions which could be given to subjects are almost beyond calculation. The types that are used, therefore, are chosen with certain specific goals in mind. Most often these goals are easily related to the purpose of the test, as in the case of Woodworth's early questionnaire, which was designed to weed out potential neurotics and psychotics from military service. Other goals for which tests have been constructed are to discriminate and provide diagnosis for those with mental disorders, to describe personality structure and mechanisms for more effective counseling and guidance, and to find better ways to describe personality. In this last case, the persons developing the test are primarily interested in using the test for theory-development and basic research.

Since the mental-testing movement has been very active in America for more than forty years, a large number of objective personality tests have been developed, and a wealth of research centered about each has been done. To begin a superficial review of each would be beyond the scope of this book. We shall therefore discuss only a few of the more prominent tests of current and historical interest for illustrative purposes.

THE MINNESOTA MULTIPHASIC PERSONALITY INVENTORY (MMPI) This test was designed to be of assistance in the diagnosis of mental dysfunction by reflecting the type of disorder and the intensity of the problem [39]. The method of test construction was to obtain subjects who reflected the abnormalities to be investigated. These subjects were chosen on the basis of consensus among clinical workers. Each case was carefully chosen to be representative of a specific type or intensity of disorder. Then 550 test items were given to this group and to a control group of normal subjects.

The 550 test items were divided into 26 groups or subsets of items. The items asked the subjects to tell about their general health, neurologic symptoms, motor movements and co-ordination, habits, family and marital relationships, as well as various psychological characteristics. From these items, scales were obtained by ascertaining which ones discriminated subjects with specific types of psychological disturbances from those with other psychopathologies and from normal subjects.

On the basis of weights assigned to test items, various scales of personality characteristics have been developed. Nine of these scales have been used very widely. These scales are defined as follows:

1. *Hypochondriasis* (Hs) Subject reports being worried about bodily functions. Often associated with past history of exaggerated physical complaints.
2. *Hysteria* (Hy) Subject reports being worried about paralyses, gastric or intestinal complaints, attacks of weakness, fainting, or even epileptic attacks.
3. *Depression* (D) Subject reports being in depths of depression, discouraged, and without self-confidence.
4. *Hypomania* (Ma) The subject reports he is overproductive in both thought and action. Often this may go along with trouble resulting from attempting too much and from a disregard of social conventions.

5. *Psychopathic deviate* (Pd) The subject's responses reflect an absence of deep emotionality. Nothing seems to matter. He may be intelligent but likely to lie, to cheat, or to be addicted to drugs. Crimes may be undertaken without interest in personal gain.

6. *Paranoia* (Pa) Subject is suspicious, oversensitive, and has delusions of persecution.

7. *Psychasthenia* (Pt) These responses are typical of those with phobic or compulsive behaviors. Subject may have queer thoughts or ideas from which he cannot escape.

8. *Schizophrenia* (Sc) Subjects who give responses scored as unusual and bizarre are high on this scale. Generally, these responses reflect a dissociation of the subjective life of the individual from reality.

9. *Masculinity–femininity* (Mf) This scale tends to differentiate masculine–feminine psychological characteristics between men and women in the normal group of subjects.

A number of other scales have been developed and found useful in clinical practice. Three of these are especially important in the routine analysis of this test's results. One is the Question Score (?). Since subjects are asked to respond to each item of the test in terms of "Yes," "No," and "Cannot say," it is possible to summate the number of ? scores of "Cannot say" scores. Tests with abnormally high ? scores are considered invalid since they cannot properly be compared with the standardization group. Another score is the Lie Score (L), which indicates the number of improbable answers given by the subject. These are answers which indicate denial of symptoms or behaviors that are so ubiquitous that denial is indicative of evasion. And finally, there is a False Score (F), which indicates that the subject gave far more than the usual number of extremely rare responses and thus was careless, or was trying to fake his answers, or was otherwise responding invalidly.

The MMPI is the most frequently used objective personality test in current clinical practice. It has also been used widely in research, and special scales, such as those purporting to measure "social desirability," "anxiety," and the like, have been devised from responses to the items for such purposes. Nevertheless, the validity of the test has been questioned sharply. For one thing, there are a number of studies which indicate that the test fails to correlate as well with psychiatric judgment as is

claimed [40, 41]. For another, the test scores do not give much information about the nature of the personality problems or their psychodynamics, beyond a label of type or types of psychopathology.

The authors of the scale are well aware of its limitations and have made various efforts to provide more meaningful and more detailed types of analyses. In their *Atlas*[1] they provide many methods for analyzing this test in terms of profiles or patterns on the various subscales and in terms of clinical examples of sophisticated analyses using the test results as a basis [42]. Some research studies have shown the values of some of its original or derived scales in predicting significant behavioral correlates. As we noted in Chapter 3, Taylor developed an anxiety scale from responses to this test and was able to use it in predicting differential learning among anxious and nonanxious subjects [43]. Schubert, basing predictions concerning the oral fixations among college smokers on Freudian theory, found that smokers scored higher on the manic and psychopathic-deviate scales [44].

Objective tests of personality, like the MMPI, have an important place in clinical work, but thus far they have not been able to replace the use of projective tests, which we shall discuss next, or other clinical procedures. They have greater use in mass programs of testing and in experimental work.

PROJECTIVE TECHNIQUES   Another type of assessment device, first introduced and used extensively by clinical psychologists and later studied and utilized in experimental studies of personality, is the *projective test*. As the name suggests, projective tests attempt to maximize the extent to which subjects attribute internal needs to the test stimuli to which they are responding. Subjects are presented with more or less ambiguous stimuli, and it is then assumed that responses are largely determined by internal needs. An excellent illustration of projection in response to an ambiguous stimulus may be obtained if the student simply asks people to look at a drifting, hazy, and fleecy cloud and to tell what it looks like. It will be noted that people vary quite widely in *what* they see, *how* they see it, and *where* in the clouds they see what they are reporting. It will be noted that

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[1] The *Atlas* is a handbook for the clinical interpretation of this test's results.

such factors as the mood, recent experience, and basic personality characteristics will influence responses.

Of course, almost any test may be used projectively in the sense that qualitative aspects of the response may be examined. We gave an illustration of the "projective use" of varying responses to a formal intelligence test item in a previous section of this chapter. When a subject responds to the question, "Why should you avoid going around with bad company?" the response may simply be scored in terms of its correctness or incorrectness or the response may be evaluated qualitatively in terms of what it reveals about the subject's personality. However, projective tests are so constructed that the subject is compelled to respond to the test in ways which give indices of feelings, needs, and values, whether he is aware of them or not. Some years ago Hutt proposed that projective tests might be classified on the degree to which the stimulus material was *structured,* i.e., on its relative degree of ambiguity [45]. On this basis tests could be classified as *highly structured* (in which the stimulus had a clear and common meaning to most subjects); *partially structured* (with moderately ambiguous stimuli); and *unstructured* (with very ambiguous stimuli).

Projective tests are presumed to be most advantageous in revealing unconscious information about the subject and his inner dynamics. How well they do this is a matter for empirical research. At the present time such tests are in very wide use, especially by clinical psychologists. There is considerable evidence that experience and extensive research are leading to improved projective tests, with more efficient methods of administration and assessment.

We shall discuss briefly three of the most widely used projective tests of personality.

THE RORSCHACH PSYCHODIAGNOSTIC TEST

This test, popularly referred to as the Ink-Blot Test, was developed by a Swiss psychiatrist, Hermann Rorschach. He was interested in the experimental study of perception as it was related to various forms of psychopathology. Inkblots had been used in psychological studies before this time, but the main focus of the earlier research had been on the nature of the associations evoked by these stimuli. Rorschach was interested, instead, in the nature of the perceptual responses—in other words, in how responses were determined rather than in the content of the responses.
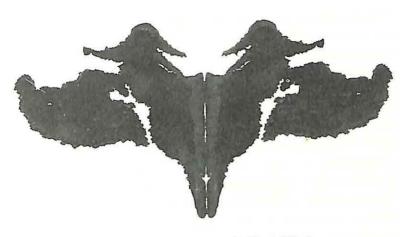
FIGURE 8.6 *A Rorschach-like inkblot.*

The test, as now used, consists of ten inkblots selected on the basis of extensive preliminary testing with more than 400 subjects, both normal and abnormal. (See Figure 8.6.) Half of the blots are made with various colors. Some of the colors are very vivid. The others are achromatic. The test is usually administered individually. The subject is shown each card in turn and is asked to tell what he sees in the inkblot. This is called the Free Association phase of the procedure. After all ten cards have been administered, the examiner presents each card once again, this time seeking to ascertain how much of the blot was used for each response, what aspects of the stimulus were used in making the response, and the precise nature of the content of the response. This is called the Inquiry phase.

In scoring the test, the examiner evaluates each response in terms of *location* (whether all or part of the inkblot was used), *determinants* (whether form qualities, color qualities, shading effects, and background were used and in what combination), and *content* (the category of the response itself in terms of concepts used). A great many variants of scoring, both quantitative and qualitative, have been developed and explored.

The analysis of the test yields many types of evaluations: level and functioning of intelligence; type of psychopathology; typical traits and defenses; areas of unconscious conflict; characteristics of ego functioning; and the like. Both the test variables and the predictions made from them, separately and in combination, have been studied in all kinds of institutional, school, and cultural settings. More than 2,000 publications dealing with the inkblot test have been published.

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Today, more than forty years after the introduction of the test, opinion on its validity is still divided. The evidence seems to indicate that judgments based on this test concerning an individual's psychopathology can be made with reasonable success by experienced clinicians. The accuracy of predictions concerning specific traits and defenses seems far less certain. It has also been difficult to assess the extent to which evaluations are ordinarily influenced by the examiner's observations of the subject during testing. The administration of the test and the behavior of the subject during testing yield rich data along these lines. Analyses of "blind" evaluations, i.e., those made on the basis of test responses alone, indicate that such evaluations are usually less effective than those based on both observational and test data. There is serious question about some of the specific variables for which the test can be scored, and many improvements on the original test variables have been proposed. Some of these are very promising. For example, test scores related to intensity of hostile impulses and indices of anxiety have shown excellent promise. And experimental studies of the test have brought a rich harvest of important information about the nature of the perceptual processes and have led to verification of some fundamental qualities attributed to the test.

As illustrative of some recent research efforts, we may note that the test was able to predict tolerance of severe stress. Subjects were exposed to eight hours of total isolation [46]. There was a significant correlation between scores on the Rorschach test which measure the control of primary processes (see Chapter 4) and tolerance of perceptual isolation. The test differentiated between those individuals who were able to maintain secondary effective goal-oriented process thinking despite the stress and those who could not do so because they were too dependent on support from reality. As another example of the value of the test, it was demonstrated that, as hypothesized, the individual's responsiveness to emotional stimuli becomes significantly restricted during old age, and this produces increasing poverty in mental associations; further, new modes of defensiveness are created [47].

One of the special problems in the use of this test is that examiners tend to find relatively more evidence of psychopathology than is actually present and less evidence of healthy or effective functioning.

A recent development in inkblot techniques designed to avoid

some of the pitfalls of the Rorschach test, and which introduces more objective and extensive scoring of variables, is the Holtzman Inkblot Technique [48, 49]. This test consists of two parallel forms of 45 inkblots each. The subject makes only one response per card. The range of the test is from the preschool level to the superior adult level. Twenty-two variables have been developed and have high internal consistency. Factor analysis of response reveals six factors that appear in most samples of individuals who have been tested. The test seems to offer excellent promise for evaluation of important aspects of the personality, but additional corroboratory research is still needed.

THE THEMATIC APPERCEPTION TEST (TAT) This is an example of tests that have "partially structured" stimulus materials. It was developed originally as a device to measure fantasies [50]. The patterns of the responses were carefully analyzed by Murray, about three years later, on the basis of his own theory of personality, and were then offered as a means of assessing needs and personality traits [51]. Since that time (1938), many methods of evaluating responses to the TAT have been developed, and investigators have claimed that the test yields measures of impulse control, severity of conflict, and ego strength, as well as general personality traits and needs.

The test consists of 29 cards, each having a printed picture, and 1 blank card. Figure 8.6 illustrates the type of test materials which are utilized. The examiner selects 19 pictures and 1 blank card in presenting the test to a particular individual. The selection of particular cards is based on the appropriateness of the cards for either male or female subjects and for either children or adults. The subject is asked to tell a story about each card, indicating what is happening, how the people in the picture are feeling and thinking, what happened before, and how the story will end. He is asked to do the same thing with the blank card.

An example of the content and possible interpretation of the response to one card (the boy and violin) is the following (the subject was a fourteen-year-old male delinquent):

Somebody wants to make that boy learn to play the violin, but he ain't gonna do it. That's a sissy thing, anyway. His "old lady" is making him do it. So he's sitting there, figuring out how he's gonna get out. (Q: What happens?) They get into an awful fight

FIGURE 8.7 *A test card from the Thematic Apperception Test. From H. A. Murray.* Thematic Apperception Test. *Cambridge, Mass.: Harvard Univer. Press. Copyright 1943 by the President and Fellows of Harvard College.*

and his "old lady" beats him up, but he doesn't do it anyway. Later he gets himself a drum.
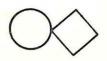
In one method of analysis, the *"hero"* can be identified as the subject himself. He is seen as an oppositional and rebellious individual. The *theme* of the story concerns the conflict between mother and son and suggests the son's view that the mother is excessively demanding and intolerant. The *outcome* of the conflict is that the son finally triumphs and has his own way. This kind of analysis, relating to the *theme* and *conflict,* helps the clinician to diagnose areas of conflict and methods of dealing with them.

Test content may be analyzed in many different ways, some qualitative and other quantitative. Scores representing dependency needs, aggressive needs, and the like may be obtained [52]. Many attempts to validate the measures of specific traits and defenses have been made [53]. On the whole, these measures seem to offer considerable research promise and have been found useful in clinical work. The problems of validation are similar to those encountered with the Rorschach test. One special problem is that the content of fantasy material is relatively unstable, since it is significantly influenced by recent events in the individual's life. This makes the problem of prediction especially difficult.
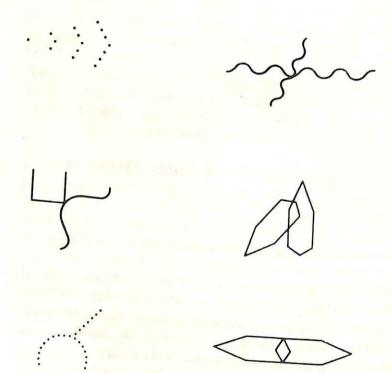
Various revisions of the TAT have been developed. One of these, a revision developed exclusively for use with children, is the Michigan Picture Test. In this test, scores are based, not on content, but on formal aspects of the performance, such as: the relative frequency of past-, present-, and future-tense verbs; action by the central figure that is predominantly centripetal (forces acting upon him) or centrifugal (his active encounter with external forces); and the relative use of personal and impersonal pronouns. These scores are related to dependency, withdrawal, self-assertion, emotional maturity, and level of internal tension. A general tension index score, indicative of the degree of maladjustment, may be obtained [54].

THE HUTT ADAPTATION OF THE BENDER GESTALT TEST A different approach to the projective measurement of intellectual and personality factors is found in this test. The test stimuli are derived from figures published by Wertheimer in 1933. Wertheimer was a Gestalt psychologist, interested in the phenomena of perception. There are nine simple line drawings, each on a separate card. (See Figure 8.8.) The subject is shown each card in turn and is requested to make a freehand drawing of it. After completing this phase of the testing, he is shown the cards again. This second time he is asked to modify the figures, as much or as little as he wishes, so as to make them more pleasing to him. In the third phase of the test, he is asked to give his associations to the original and modified figures.

This visual-motor test was first employed by Bender to investigate the kinds of abnormalities of perception and motor performance displayed by patients with various physical and psychological disorders. Hutt later developed various methods

FIGURE 8.8   *Test figures for the Hutt adaptation of the Bender Gestalt Test. Courtesy of Grune & Stratton, Inc., N.Y.*

for utilizing the test projectively on the assumption that the underlying personality organization would influence the kinds of distortions made in the drawings [55]. Such factors as amount of increase or decrease in the size of the figures (related to approach versus withdrawal tendencies), degree of change in orientation of the figure or rotation (related to depressive and euphoric mood swings), and difficulty with closure of the figures (related to capacity for relating to people) were investigated clinically and experimentally. The data from the association phase of the test were used to explore areas of conflict and defense.

The test was utilized extensively during World War II, especially in the study of brain damage, severe reaction to stress, differentiation of neurotic from psychotic conditions, and similar problems. It has been used extensively ever since [56]. Methods for estimating intellectual level (for children and retarded adults) have been developed. Although some aspects of the qualitative analysis and some quantitative scores have been reasonably well validated, other problems of validation are far from settled and will require considerable research study. However, the test has been very useful as a source of rich hypotheses about psychopathology in patients.

Attitudes: Their Nature and Meaning

A third type of variable presenting special problems of assessment and definition is that of attitude. Useful concepts about the nature of attitudes enable us to describe changes in attitude and suggest ways in which they can be changed.

First, we must agree on what attitudes are. By attitudes we mean the beliefs, feelings, and action tendencies of an individual or group of individuals toward objects, ideas, and people. An action tendency refers to a disposition to respond in a certain way toward an object or person. Generally speaking, we will tend to approach and interact with objects toward which we hold favorable attitudes and to shun or avoid objects toward which we have unfavorable attitudes. It should be noted that a person's verbal report of his attitudes may not always correspond to his actual responses toward the object. A person could report that he does not believe in the principles or actions of the Ku Klux Klan and yet might support them financially or assist

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them in other ways. Therefore, any definition of attitude must take into consideration other things than a person's verbal responses.

While most attitudes are complex, they often can be described as favorable or unfavorable toward the object of the attitude. It should be remembered that the components of an attitude contributing to this favorable or unfavorable reaction are seldom as logical to the observer as they are to the holder of the attitude. In other words, it is often possible to point to inconsistencies in the beliefs, feelings, and action tendencies of others, whereas the components of our own attitudes seldom seem inconsistent but, rather, support the "obvious" logic of our positions.

Changes in attitude, and the degree or direction of change, demand techniques capable of establishing reliable and valid measures. Accordingly, psychologists and other social scientists devote much time and attention to sampling techniques and instruments designed to measure attitudes.

Two major types of attitude-measuring instruments have been devised, namely, scales and questionnaires. The former tend to be more frequently used in studies of social issues, the latter in application of research to social phenomena. Prior to a discussion of scales and questionnaires, a brief comment about sampling is necessary.

THE SAMPLE The results of any attitude-measurement technique upon a sample of subjects will be generalized to, or compared with, a larger population, since, almost always, it is impossible to examine every individual in a population under study. Therefore, some subgroup of the larger population is selected for testing. It is hoped that the sample will faithfully represent, and be "typical" of, the larger population. In a national election the population with which we are most concerned is the total number of persons who actually vote. For a new product, the population of potential users is most important. Various techniques have been developed to draw a sample that will adequately represent the larger population.

Kish [57] has described methods called simple random sampling, probability sampling, area sampling, stratified sampling, and cluster sampling, among others. As is almost obvious, the selection and size of the sample are partly a matter of practical affairs: budget and time. But some systematic method of select-

ing the sample from the universe of the population is essential if the results are to have reliability and validity.

In drawing a simple random sample, the size of the population—such as the number of voters in the country—is known. A number can be assigned to each one. Those to be interviewed will be determined on a chance basis, as if numbers were drawn by chance. Those whose numbers are drawn will be included in the sample. In the probability sample, selection of respondents is based on a knowledge of the groups of people comprising the population. Estimates might be made of the number of people in different religious faiths in the general population. Then samples might be drawn from each religious group at random, with the stipulation that the number selected from each religious group be in proportion to the total number of such individuals in the population. It is, in other words, a statistical refinement of the random sample technique. Area sampling selects its respondents from geographical boundaries that are defined and identifiable; most often the individuals selected in area sampling are identified by dwelling units within the area. (See Table 8.2.)

TABLE 8.2. TYPES OF SAMPLING AND SELECTION PROCEDURES

Sample	Chance Selection
Random	From total population
Probability	From subgroups of population
Area	By geography
Stratified	From strata with specific characteristics
Cluster	From concentration within segments

Stratified sampling divides the population into subpopulations called strata. From each stratum a sample is selected. For example, subsamples might consist of product-users versus non-users of a product, or teen-age males and teen-age females, or almost any variable in the characteristics of a population about which one hopes to obtain data leading to a solution of the problem investigated. Cluster sampling requires the selection of respondents from defined groups or areas. Selecting a sample from five cities, eight blocks, three classes of general-psychology students, or, for that matter, any other selected and defined segment of a population is the essence of cluster sampling.

Regardless of the method of sampling and the statistical refinements introduced to reduce sampling errors, the ultimate

value of the sample obtained depends upon the methods used to determine attitudes. When using interviews, one cannot hope to obtain adequate information without paying great attention to the briefing, supervising, and auditing of field interviews. Unfortunately, this fact is too often overlooked. Many methods have been devised for conducting "standard interviews" and for controlling for the many kinds of extraneous variables which can enter into an interview. As might be anticipated, however, the problems become much greater when interviews are conducted by large numbers of interviewers.

SCALE MEASUREMENT Different scaling methods exist, and four methods used in attitude measurement will be briefly described, namely: the Thurstone, Likert, Guttman, and Osgood methods. When using the Thurstone method, subjects are presented with a number of statements reflecting various degrees of favorableness toward a topic such as birth control, communism, religion, etc. Each statement is assigned a mathematical value, say from one to eleven, on the basis of judges' ratings of the statement. The subject's attitude is measured by adding together the score of the statements chosen. The numerical weight assigned to each statement is the average weight of a group of judges. In the following sample, the second statement has a weight of 5.5. This means it was probably placed in the categories 5 or 6 by most judges. The third statement with a weight of 10.6 is a strongly negative statement and was placed at the end of the scale.

An example of such statements to measure attitude toward the church is [58]:

(.5) I feel the church is the greatest agency for the uplift of the world.

(5.5) Sometimes I feel the church is worth while and sometimes I doubt it.

(10.6) I regard the church as a parasite on society.

As can be seen, the lower the numerical value of the statement, the more favorable is the statement about "the church." A subject's responses on other statements about "the church" or religion can be summed to find the degree of favorableness indicated by the responses.

The Likert scale has the subject assign one of the following responses to statements: (5) strongly approve, (4) approve, (3) neutral, (2) disapprove, and (1) strongly disapprove. The

attitude measurement is then a sum of the values assigned to the statements. An example of this type of procedure would be:

In the interest of permanent peace, we should be willing to arbitrate absolutely all differences with other nations which we cannot settle by diplomacy.

Strongly Approve	Approve	Undecided	Disapprove	Strongly Disapprove
(5)	(4)	(3)	(2)	(1)

Guttman [59] has proposed a method in which the scale has a special cumulative property. For example, a subject who responds positively to the eighth item of a ten-point scale ranging from favorable to unfavorable will have responded positively to all other seven items. The subject who responds to the fourth item will have responded positively to only the first, second, and third preceding items. In practice, the construction of a scale which justifies this assumption of cumulative endorsement has many difficulties because there are many dimensions of attitudes. However, the scale does present an interesting methodological departure from the Thurstone and Likert methods.

A fourth method of attitude measurement has been proposed by Osgood, Suci, and Tannenbaum. It is known as the Semantic Differential [60]. (See Table 8.3.) The method requires the

TABLE 8.3. ILLUSTRATION OF A SEMANTIC DIFFERENTIAL FORM

angular	. . . .	rounded
weak	. . . .	strong
rough	. . . .	smooth
active	. . . .	passive
small	. . . .	large
cold	. . . .	hot
good	. . . .	bad
tense	. . . .	relaxed
wet	. . . .	dry
fresh	. . . .	stale

SOURCE: C. E. Osgood. The nature and measurement of meaning. *Psychol Bull.*, 1952, **49**, 229.

respondent to rate the associative meaning of a word or statement. A series of descriptive polar terms is presented below the "to-be-rated" item. Subjects indicate by a mark, on a line connecting the polar descriptions, the degree to which the item

is like one or the other of the polar descriptors. The polar terms are made up of many pairs of words. Words often used are good-bad, rough-smooth, weak-strong, small-large, tense-relaxed, wet-dry, fresh-stale, cold-hot, fair-unfair, etc.

This method is especially valuable in determining the degree to which different groups of subjects tend to agree on the meaning of words or statements. The pattern of responses on the polar descriptors reflects the associations of the subjects to each item tested. It is interesting to note that about one-half of the variance of ratings of different words is contributed by the evaluative dimension with "good" and "bad". as the polar extremes.

THE QUESTIONNAIRE The questionnaire is probably the most widely used instrument to measure attitudes. A questionnaire can be either structured or unstructured.

The structured questionnaire asks a question and provides several possible answers. The person being interviewed is encouraged to select the most appropriate answer from among those provided. The unstructured questionnaire primarily asks questions, but no suggested answers are offered. The latter technique provides more freedom to the interviewees but is more difficult to analyze when large groups of subjects are used. The interviewer is provided with the questionnaire and contacts the people selected to be in the sample. Interviews are usually conducted on a face-to-face basis but can be done via the telephone or by mail. The decision as to which type of interview to use is based on the problems being studied and other practical factors.

Sometimes interviewees are asked to rate responses on a numerical or verbal scale so that the intensity with which the attitude is held may be indicated.

ATTITUDE FORMATION Which of the different methods is used on any occasion depends in part upon the views held by the investigator about the formation of attitudes and the ways in which they can be changed.

A large part of our social lives is dominated by attitudes. These are sometimes predictable from the relationships we have had with others, particularly members of our families, our friends, our teachers, our neighbors, and our religious advisers. Of course the family contributes to the formation of our

attitudes. Attitudes toward the opposite sex, toward religion, toward education, toward occupations, toward political parties, and so forth may be the result of our accepting or rejecting the attitudes held by members of our family.

Our neighborhoods have certain structures in terms of housing, cultural facilities, religious groupings, and possibly ethnic customs. Further, there are neighbors. The neighbors as adults or children tolerate, reinforce, or punish certain attitudes and behavior. As a result, we are New Yorkers, Midwesterners, Southerners, etc. Depending upon personality and environmental factors, we may accept or deny environmental influences. Conformity or rebellion may arise as the result of our adjustment to environmental pressures.

Our present economic and occupational position and aspirations for the future also contribute to our attitudes. In part they may influence our attitudes toward unions, management, and our beliefs about certain proposed legislation. Our entire socioeconomic background influences our present and future attitudes. When we believe that certain objects or actions may act to lower our economic status, our attitudes toward them may become less favorable. When other objects or actions seem likely to improve our economic status, they often seem more favorable to us. While attitudes do not respond in perfect relationship to economic considerations, some attitudes are bound to our views of the relationship between the attitude's object and probable economic changes. Attitudes toward some objects can be changed by changing this relationship.

Attitudes are influenced by information we receive from various sources. When this information is congruent with our predispositions and previous judgments, we often develop a more favorable or positive attitude toward the new object, idea, person, or group. However, when the information, no matter how received, is incongruent with our predispositions, the source may be judged as unreliable and have little effect upon our attitudes. Actually, present attitude structures are quite resistant to change by additional information. Apparently it is easy to question the credibility of information which goes against former attitudes or to forget or distort the information.

All forms of mass communication—television, radio, newspapers, and magazines—"feed" their audiences large quantities of "information." In part, the presentation of news or information is constructed so as to cater to the attitudes of their

audiences. In turn, the audience selects the specific form of mass communication that best reflects its attitudes on various subjects. Items of interest range from sex and the teen-agers, crime, divorce, politics, religion, dope addiction, and civil rights to pornographic literature. The material we select helps us to either substantiate our opinions or establish new ones.

The impact of information upon attitudes depends upon the subject's impressions of the source and the manner in which the information is presented. Kelman and Eagly [61] report the results of two experiments. In the first, three communications to a group of Negro college students were the same. However, one-third of the students heard the tape-recorded communication from a communicator represented as pompous, paternalistic, and authoritarian. The second had a communicator represented as a modest, humble, and objective scholar (a college professor). The third group heard from a person represented as a Negro minister who spoke as a member of the Negro community. The "negative" speaker was consistently judged lower in trustworthiness, expertness, general attractiveness, and representativeness than the other two speakers.

In the second experiment, high-school students heard taped messages emphasizing the juvenile delinquency problem. A "negative communicator" projected the image of an ignorant enemy, while the "positive communicator" projected the image of one who would be personally attractive to a teen-age group. The main conclusion drawn is that "the tendency to perceive communication content in line with one's attitude toward the communicator is most likely to come into play when the communicator arouses strong feelings." Kelman and Eagly hypothesize that "misconception is a function of the degree to which the incongruous situation raises questions of *self-definition* in the subject."

The mass-communication media are effective though non-scientific in changing attitudes. They represent particular points of view about foreign countries, the United Nations, color television, the President, taxes, federal aid to education, dieting, smoking, fashion, and art. They act to form attitudes or change existing ones.

ATTITUDE CHANGE Changes in attitudes can be classified as changes of direction or changes in intensity. The change most readily obtained is a change in intensity of a pre-established

attitude. When a person is for (or against) an object, idea, or person, it is rather easy to change the intensity of the attitude as long as it remains in the same direction.

Achieving a change in direction of attitude, that is, from favorable to unfavorable or vice versa, is usually more difficult to achieve, although it is possible.

As recently summarized by Krech, Crutchfield, and Ballachey [62], attitude modifiability is a function of seven characteristics of attitudes, namely: (1) extremeness, (2) multiplexity, (3) consistency, (4) interconnectedness, (5) consonance, (6) strength and number of motives served by the attitude, and (7) the importance of the values to which the attitude is related.

The more extreme the attitude, the less likely it is to be changed. The more complex the attitude, the less likely it is that a change in direction of attitude will occur, but the more likely it is that a change of intensity in present direction can be made to occur. Attitudes with consistency among their various components tend to be more stable than attitudes with inconsistent components. The more an attitude is interconnected with others, the less likely is change to occur. For example, if one is a conservative in many walks of life, then changing conservatism in any one area will not be readily accomplished. When an attitude exists in a consonant relationship with other attitudes, attitude change is not likely to occur. Since attitudes can serve many motives and needs of an individual, the possibility of change will depend upon the number and strength of the motives served. And last, the closer the attitude is to the basic values held by an individual, the less likely is change to occur.

Changes in attitudes may occur when there is an imbalance or disequilibrium among various belief systems. This disequilibrium initiates change, and change operates to restore equilibrium. Generally speaking, models of attitude change can be based on theories of equilibrium restoration known as dissonance models [63], balance models [64], or congruity models [60]. In many respects the models have a great deal in common.

The essence of these theories is that incongruity, dissonance, and imbalance among attitudes are conditions of disequilibrium, and under such conditions attitude changes occur in the direction of reducing these states.

ATTITUDES IN BUSINESS Probably those with the greatest interest in measuring attitudes which reflect public opinion are

companies engaged in marketing products for the consumer. This field is known as "market research" or "consumer psychology." It represents a link between business and the public. Information about the attitudes of purchasers is of interest to manufacturers, retailers, advertising agencies, and the mass-communication media who sell advertising time or space.

Bogart [65] lists the types of research performed in this field as follows:

(1) To determine the position of competitive brands in the market, both in terms of actual unit or dollar sales and in terms of consumer awareness and acceptance; (2) to study the prevailing consumption patterns of different segments of the population in relation to particular products and brands; (3) to understand the tastes and motivations that underlie opinion and behavior in the marketplace; (4) to evaluate the influences on consumer action and attitudes, including the opinions and activities of the retailer and the effects of display, promotion, and advertising; (5) to determine how successfully various techniques of persuasion and communication appeal to popular tastes and thereby influence the purchase of goods and services; (6) to compare the opportunities that various media provide for communication with different segments of the public.

This is an area of applied research which is preoccupied with the practical nature of the problem rather than its theoretical implications; it is thus likely to be more descriptive than analytic.

What are the issues involved when a company attempts to measure consumer reactions toward its own and its competitors' products? Immediately we are in the realm of attitude measurement. There are those who legitimately engage in the business of measuring attitudes of consumers. They may work either on the staffs of large corporations or as consultants to them. These people provide information which will allow more effective marketing of products and services by their clients.

Today there is a lot of talk about the "images" of corporations. These are merely the total of the various attitudes held by people toward these companies. Advertising attempts to build or change these images. Market research tends to find both the favorable and unfavorable attitudes toward these companies and to suggest ways in which favorable attitudes can be enhanced and unfavorable attitudes can be reduced.

Those engaged in this business do not try to mislead con-

sumers, for the very sound business reason that they "cannot get away with it." The few companies who try to misrepresent their products sooner or later suffer from the backlash of consumer reaction. It is true, however, that some advantages are taken by exaggerating certain claims or by presenting claims in ambiguous fashion. Such instances should not be included in the ethics of the more reputable business organizations and should never be tolerated by the professional social scientist working in this area.

The successful experiences that a consumer has with a brand will probably lead to another purchase. If unsuccessful, the consumer will be likely to switch brands. The essence of consumer research is simply to measure the variety of attitudes and experiences that consumers have. With the knowledge then available, business policies and practices can more or less objectively conform to the reality of the situation.

Another area of great concern relates to the unfulfilled needs of the consumer. At one point in time, only a few years ago, frozen foods were unknown. A controversial question is whether frozen foods sold well because of certain unfulfilled needs or desires on the part of the consumer or whether someone with a bright idea created the need or desire for them. It is often presumed that consumer needs, real or imagined, result from "deficits" in life. These deficits may not be of vital concern but represent a product or service for which people will pay. Should beer be marketed in bottles or in cans? If in cans, how should they be opened for most appeal?

The discovery of a latent or unfulfilled need in the consumer population is obviously more economical and profitable than it is to cajole a consumer into using a product or a service which he does not need. The introduction of men's toiletries, especially the cologne type of after-shave lotion, is another illustration. Do manufacturers and advertisers create a need for this product, or has it existed among consumers as a desire to be complimented for their odors by women? Color television is another example. It has been around for a number of years, and there is no doubt but that it will someday replace black-and-white television. There has not been an overwhelming demand for it in its early stages. As the popularity of color television increases, we might ask whether color television was foisted on the consumer, and a need for it created, or whether there was a pre-existing need which was fulfilled.

PUBLIC-OPINION AND POLITICAL POLLING One of the great American games is to predict election results. Surveys are conducted and appear in newspapers and magazines. Readers regard such publications as news, and since most people are interested in predictions and make many of their own, the interest in the results of such surveys seems high. Naturally, the winner of the poll reacts favorably to them, while the loser disregards or disclaims them.

A more serious aspect of political polls is the confidential poll sponsored by a political organization. A candidate has a need for advance knowledge, on the basis of which he and his advisers may plan tactics and strategy and may often decide which stand on which campaign issues shall be emphasized, minimized, or even avoided. Such polls and their results are rarely, if ever, revealed to the public. They are used by the political candidates and their parties to determine, as well in advance as is possible, the attitudes of the public on the various issues. Such polls also are used in measuring the "image" of the candidate. The action based on this image leads to attempts on the part of speech-writers and publicists either to improve or change the image of the candidate.

There are those who favor political polling because they say that it allows the candidate to be more effective and to more accurately estimate the temper of the public. There are others who believe that this is unfair and who argue that polls influence elections by their very publication.

Another subject of investigations into political behavior is the characteristics of those who vote. Among the variables related to frequent voting in elections are high income, high education, being a male, and being an older resident in the community. Variables related to infrequent turnout at the polls are low income, low education, being a woman, being young (under 35), and normal political situations. Religious affiliations are important. More Jews vote in most elections than do Catholics. The explanatory factors for rates of voting turnout are, (1) factors affecting the relevance of government policies to the individual, (2) factors affecting access to information, (3) factors relating to group pressure to vote, (4) factors relating to pressure not to vote [66].

Another problem to be studied is whether the voter will change his attitude during the course of a campaign. Conducting surveys at several points during a campaign, and analyzing

voter approval or disapproval of campaign issues, allows trends to be spotted. For example, racial inequities are important issues to Negroes. One paradox in the relationship between race and political affiliation is that most Negroes have voted Democratic since the New Deal era of the 1930s while many Southern Democrats have taken an anti-Negro position over the same period. A major swing to Republicans or a closer identification with Democrats on the part of Negro voters would surely have an effect on the future of American politics.

PREJUDICE Prejudices are attitudes. Half-humorously, prejudices are other people's attitudes that we don't share. The prejudices of others are, therefore, often called "wrong" or "bad" [67]. Prejudices have an important impact on all of us and on our interpersonal relations. Almost everyone is in favor of reducing prejudice, but not everyone is willing to admit that his attitudes are prejudices. Someone who is anti-Negro, or anti-Semitic, or anti-anything can present "facts" to prove that he is not prejudiced. This reflects an almost universally unfavorable attitude toward "prejudices" in our society.

Intelligence does not insulate us from basing our behavior on factors other than rational analysis and decision. In other words, people with varying degrees of intelligence often share the same attitudes and hold them with similar intensities. Justifications of attitudes are often a function of the rationalizations used to justify the attitudes held for other reasons.

For any person, attitudes are related to motives, values, personality, and emotions. The individual has internal needs and reacts to external social pressures. In coping with the environment, internal needs are manifested through wants, aspirations, and expectancies. To other people a person expresses and defends his attitudes. When attitudes are weak, he may not even choose to defend them; but when his attitudes about an idea, object, person, or group are intense, he will often use many kinds of defense mechanisms to appear logical, lofty, and righteous.

Racists hold intense attitudes. Often they are rabid reformers and claim to be "idealists." Others do not agree with their ideals and insist that they have no ideals at all.

One's attitudes or prejudices are related to the groups with which one identifies. People at all ages belong to many groups, of a formal or informal variety. This is reflected in clubs

(good?) and gangs (bad?). We have "good colleges" and "poor colleges." Which are which depends in part on *who* and *what* you believe. Think of the large number of organized groups: Republicans, Democrats, P.T.A., fraternities, Daughters of the American Revolution, CORE, KKK, Black Muslims, Anti-Defamation League, anti-vivisectionists, etc. Such organizations tend to have some rabid and inspired members, and for each there are antagonistic nonmembers who would not join for any reason. On the other hand, most organizations have many passive members who belong but do not participate in group roles.

We may ask, How does it happen that groups can have staunch supporters, passive onlookers, and rabid attackers? Only part of the answer comes from social approval or immediate gratifications. The other part of the answer must stem from the attitudes held prior to joining the group. Individuals expect the group to help them achieve certain goals, or they find support for their attitudes from the similar attitudes of others. The satisfaction in finding a number of people with similar attitude structures should not be underestimated as a motivating factor.

Summary Statement

In this chapter we have seen how psychologists have attempted to conceptualize such behavior variables as intelligence, personality, and attitude. The theories which underlie the measurement of such variables influence, sometimes to an extraordinary degree, the methods used in their assessment. Sometimes the methods of assessment prejudice the kinds of results which are achieved. It may seem, therefore, that we are constantly caught within the web of our own creation. To a certain extent this is undoubtedly true. Nevertheless, the more precise we can be about both our theories and our methods of evaluating them—in other words, the more explicitly we understand fully the nature of our investigations into behavioral phenomena—the more likely we are to be critically aware of the limitations of our knowledge, on the one hand, and of needed new directions for our explorations.

In science, theory and prediction go hand in hand. We may choose to conceptualize our understanding of man in terms of

forces within him or in terms of interactions between man and his environment. In either case we are not able to ascertain the "whole truth." In each case different kinds of measurements or evaluations and predictions emerge. Measurement, if valid, enables us to assess phenomena more adequately. But in the end, it is the man who uses the measuring devices who must decide what he wishes to learn about man and in what direction he wishes him to travel.

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